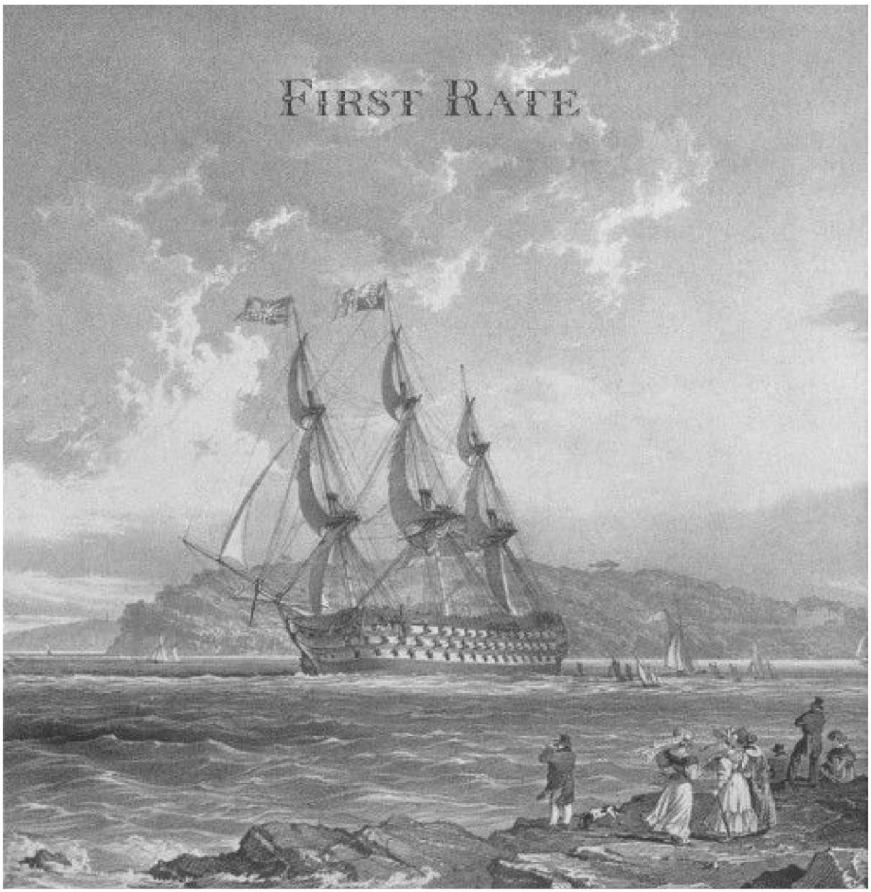
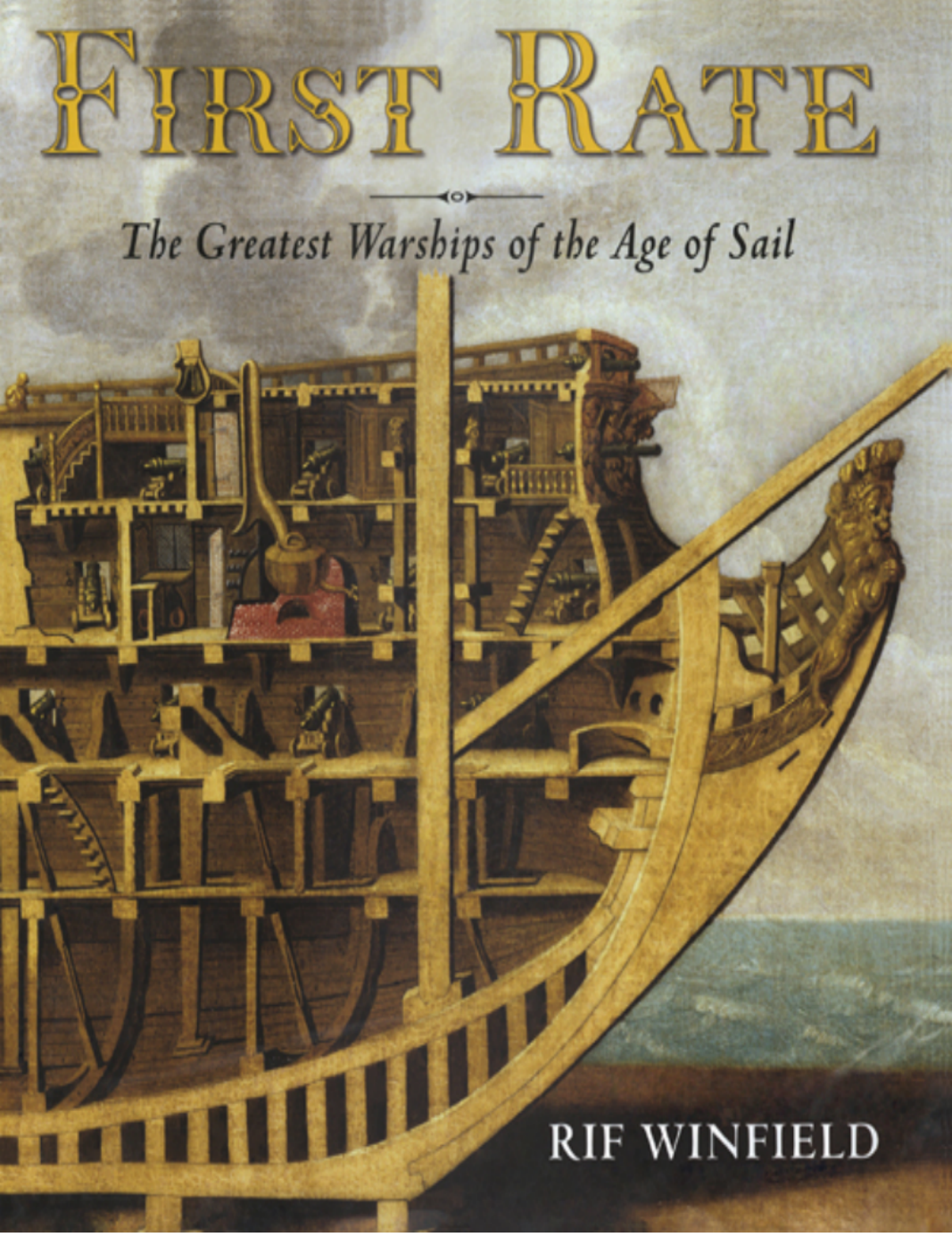

First Rate

VISIT...

First Rate

The Greatest Warships of the Age of Sail



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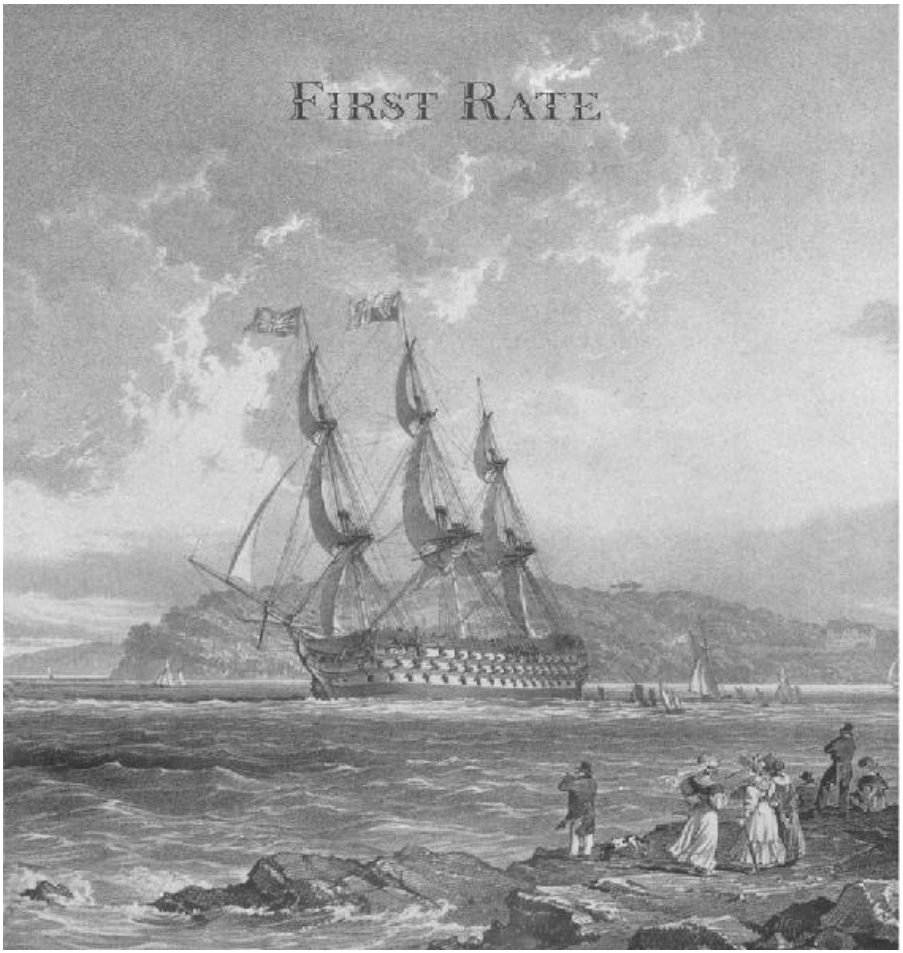
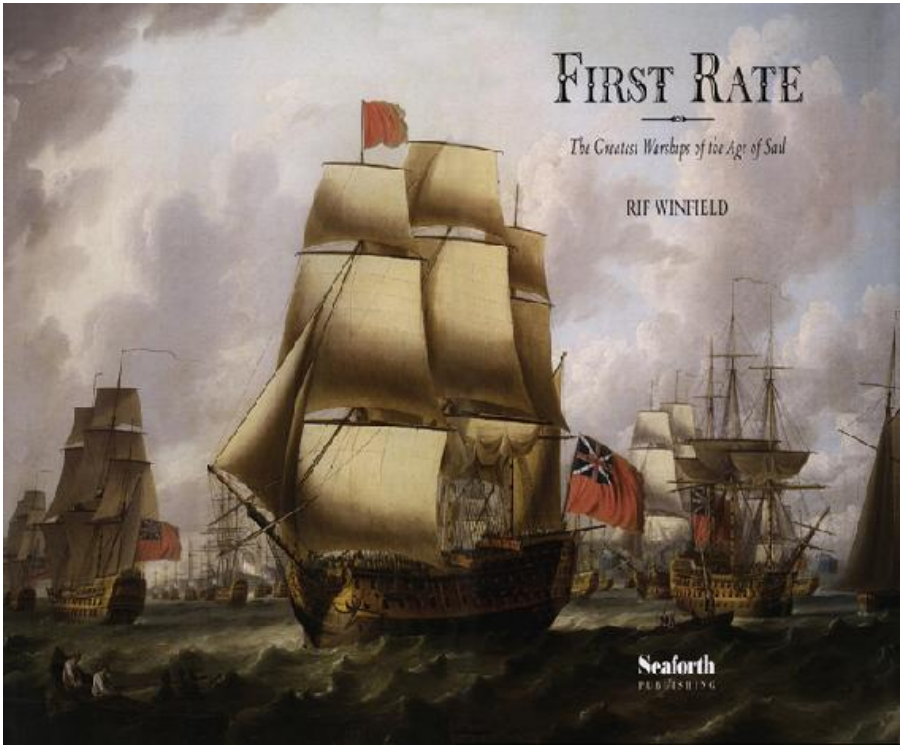


Britannia leaving Hamoaze with the Lord High Admiral on board, lithograph by L Hague after a painting by T L Hornbrook. The Duke of Clarence was Lord High Admira! in 1827–28. [NMM X0120]



The *Victory* sailing from Spithead, 1791, oil painting by Robert Dodd. There is another First Rate astern which is probably the *Queen Charlotte*. [NMM BHC3694]

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Introduction and Acknowledgements

THIS book describes and illustrates the Royal Navy's largest and most powerful warships from the *Prince Royal* of 1610 until the final manifestation of the wooden capital ship in the 1850s with the steam-assisted *Victoria* and *Howe*.

Under the classification system adopted by the Navy, its greatest ships were categorised as 'First Rate', a description which has come down to the modern era as signifying objects of the highest quality. These ships were the largest moving artefacts in the world prior to the modern era, and they served not only as the most imposing weapons systems of their day – the ultimate deterrent against the country's overseas opponents – but also as potent symbols of the power and prestige of the nation, not just for the monarch and the government, but also for the wider civil populace. The greatest care was lavished upon their building and their fitting out involved enormous expense, but as a focus of national pride, they were held in high esteem by the public. The surrender of the *Royal Prince* in 1666 was a major blow to English morale, while the losses in the Medway a year later were viewed as nothing less than a national catastrophe.

During the seventeenth century the definition of a First Rate, based first on the size of the complement and then on the number of guns, became more ambiguous, in some cases depending on the number of flagships required. Some of the early ships only received the First Rate accolade for part of their lives, and these have been mentioned only briefly in this book. The Second Rate *Saint Michael*, for example, was re-classed as a First Rate between 1672 and 1689, but design-wise her study really belongs to a book on the smaller three-deckers, the Second Rates. On the other hand, the *Royal James* (built in 1658 by the Commonwealth as the Second Rate *Richard*) was re-classed as a First Rate from 1660 and served as such until her loss in 1667, so full coverage is included in this volume.

During the late eighteenth century, four captured prizes were classed as First Rates by the Royal Navy – the French *Ville de Paris* in 1782 and *Commerce de Marseille* in 1793, and the Spanish *Salvador del Mundo* and *San Josef* in 1797. Consideration of these four ships is

included in the final chapter of this book.

In 1817 all the surviving Second Rate three-deckers – previously counted as 98-gun ships – were re-classed as First Rates (the new Second Rate henceforth comprised the largest two-deckers). Apart from several very elderly ships which by 1817 had mainly been reduced to harbour service (*Barfleur* of 1768, *Glory* of 1788, *Prince* of 1788, and *Prince of Wales* of 1794), the ships affected by reclassification were the *Dreadnought, Neptune* and *Temeraire*, the *Ocean, Impregnable, Boyne* and *Union*, and the *Trafalgar, Princess Charlotte* and *Royal Adelaide* (the last three were still building).

These small three-deckers were always considered to be the poor relations of the 120-gun ships that formed the core of the First Rates after 1817, so they have not been covered in detail in this book. However, it is worthwhile pointing out that, although weaker than contemporary First Rates, from the *Dreadnought* onwards all these ships were comparable in size with the pre-war First Rates, such as *Britannia* (now renamed *Saint George*), *Victory* and *Royal Sovereign*, which trio had been reduced to Second Rates before 1817 but were restored to their former rating in that year.

In the text abbreviations have been kept to a minimum, but in the tables BU stands for 'broken up' and RB for 'rebuild' or 'rebuilt'. Dates are given in European format of day.month.year, and are in accordance with the calendar used in Britain at the time – Julian (or Old Style) until September 1752 and Gregorian (or New Style) thereafter; however, the start of the year under Old Style calculation (25 March) has been taken back to 1 January to comply with modern conventions.

Author's acknowledgements

As always, I am extremely grateful to those who have provided help and information in the compilation of this book. In particular, I would wish to thank Andrew Lambert, Frank Fox, David Hepper, John Houghton and John Tredrea, all of whom kindly read through drafts of the text and made welcome suggestions for improving it or pointed out errors and oversights. Thanks are also due to Rob Gardiner, who as publisher sourced all the illustrations, contributed much of the captions, and was constantly helpful in providing guidance. As always, my long-suffering wife Ann put up with my frequent unavailability as I manipulated the text.

Publisher's acknowledgements

For help with illustrations, we are indebted in particular to Major Grant Walker of the US Naval Academy Museum in Annapolis, and Arnold and Henry Kriegstein. The vast majority of the images came

from the National Maritime Museum at Greenwich (credited NMM plus a reference number), where Douglas McCarthy handled our large and complex orders with unfailing efficiency and courtesy. Of the curatorial staff special thanks go to Jeremy Michell and his staff at the Brass Foundry for help with selecting the draughts, and to Simon Stephens for arranging access to some of the more obscure models in the Kidbrooke store.

CHAPTER

1

The Jacobean and Commonwealth First Rate

THE *Prince Royal* was the first three-decked warship to be built for the Navy, although the third tier was for many years to be only lightly armed. A convincing oil painting of the ship at Vlissingen (Flushing) by Hendrik Cornelisz Vroom and dated to 1613 shows that the levels of the gunports were stepped down towards the stern, indicating that initially the three gundecks were not flush from end to end, but incorporated falls in the deck levels designed to cope with the notable 'sheer' or rising of decks towards the ship's ends. This modern model is based on that 1613

painting, with the stepped gunports aft. While there were apparently fewer guns on the upper deck, both the 1613 painting and the model show a continuous row of upper deck gunport wreaths. The ship had been commissioned (on 6 April of that year) under Lord High Admiral Charles Howard to transport James I's daughter Elizabeth and her new husband, the Elector Palatine Frederick, from Dover to Vlissingen in May.

FROM SHIP ROYAL TO FIRST RATE

A system of grading the fighting ships of the Monarch's navy into several ranks or ratings appears to date from the start of the Stuart era. Certainly the ships of the Elizabethan navy were perceived to undertake different roles depending on their size and strength, and the Tudors would generally refer to the largest of their galleons as 'Great Ships'. Yet it was only from James I's accession that any formal system of classification was established, with the 'Great Ships' being clearly separated from the 'Middling Ships' and 'Small Ships', with even smaller craft being described as 'pinnaces' (as distinct from 'ships').

It was during this reign that the largest of the Great Ships – those that usually served as the flagships of the fleet – began to be separated from the other Great Ships by the designation 'Ships Royal' or 'Royal Ships'. The 1618 Jacobean Commission of Enquiry into the state of the ships of the King's 'Navy Royal' (the term 'Royal Navy' was not generally used until after the Restoration of the monarchy in 1660) made a clear distinction between the Ships Royal and the lesser category of Great Ships. Of the former their Report stated that 'the former navies had but four Royal ships, which were held sufficient for the honour of the state, as being more than the most powerful nations by sea had heretofore…'.

When King James I came to the throne in 1603 there were actually six such Royal Ships in existence, all of them former galleons which had been built or rebuilt in the previous twenty-three years. Three of these had actually been built originally at the very start of Queen Elizabeth's reign, all by the Master Shipwright Matthew Baker in the Royal Dockyard at Woolwich. Initially these were all 'high-charged' galleons, built on the Spanish model with a towering superstructure aft, and poor sailing qualities. However, towards the end of his long career Baker rebuilt all three along the lines which had proved so successful for smaller galleons during Elizabeth's reign, with lower superstructures and better performance under sail.

Nevertheless, by 1618 the *Triumph* and *Elizabeth Jonas* were laid up in dock at Woolwich and unserviceable, so that they were to be sold to the highest bidder prepared to break them up at their own expense. Plainly it was felt that the remaining four provided a sufficient

number of these prestige vessels, for the Commission judged that no replacement Royal Ships should be built, while instead an increase should be made in the number of Great Ships of 650 tons each – perceived at this time to be the most cost-effective size for naval combat. The third of Baker's elderly trio, the *White Bear* was retained under the Commission's proposals in 1618, but by 1627 she was noted as being unserviceable, and was sold to be broken up at Rochester in June 1629.

Two of the remaining ships dated from the late 1580s, but were both rebuilt in James's reign. The *Anne Royal* was originally built as a private warship for Elizabeth's favoured courtier, Sir Walter Ralegh, but was requisitioned for the Crown before completion. She was undocked on 29 June 1608 following her rebuilding; as the former *Ark Royal*, she had great appeal in the popular mind. She lasted until she accidentally bilged on her own anchor while mooring in the Thames and sank off Tilbury Hope on 9 April 1636; the wreck was raised and broken up at Blackwall. The *Merhonour* was undocked on 6 March 1615 after being rebuilt in turn, also at Woolwich (all 'Royal Ship' construction and rebuilding took place here during the first 60 years of the seventeenth century). The last Elizabethan capital ship to survive, she was still acclaimed as one of the navy's fastest ships in 1635, but by 1637 she was recorded as being 'generally decayed', and it was initially planned to rebuild her again. This rebuilding never occurred, and the rotting hulk was finally sold at Chatham by the Commonwealth's administration in 1650.

The final Ship Royal extant in 1618 was the only major warship to be built under James I, and it had its origins in another of Elizabeth's Great Ships, the *Victory*. This had actually been built as a merchant ship, the *Great Christopher*, and had been purchased for the queen in 1560, renamed and refitted as a warship. The *Victory* had already been rebuilt once, in 1587, before serving as Sir John Hawkins's flagship during the campaign against the Spanish Armada. By 1606 she was in need of a fresh rebuilding, and was removed from Chatham to Woolwich Dockyard for that purpose.

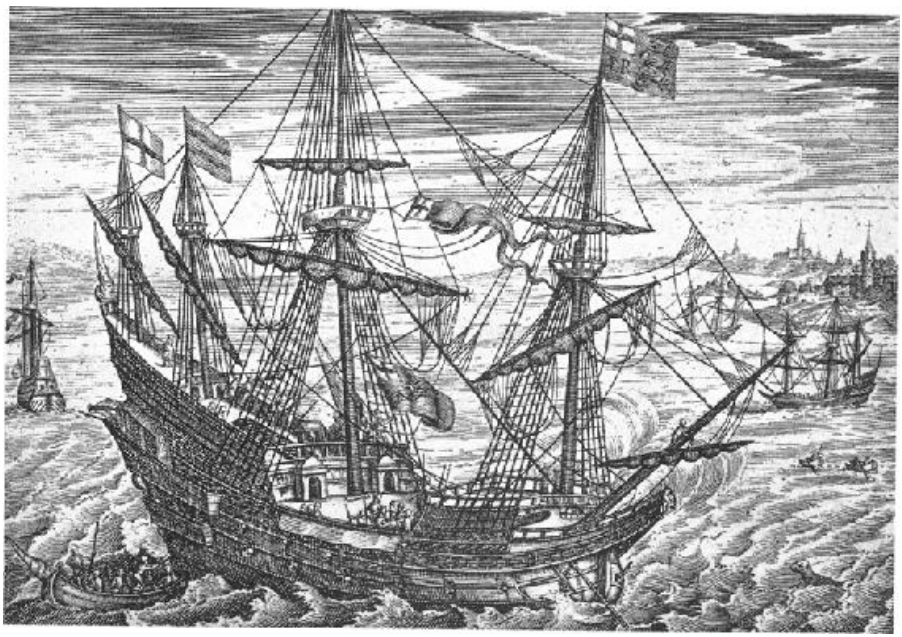
Enter the ambitious young Master Shipwright at Chatham, Phineas Pett, the latest generation of one of the major shipbuilding families of the Elizabethan age, the Petts. His father Peter and brother Joseph had undertaken the construction of several of the Great Ships of the 1580s, and Phineas himself had been apprenticed to Matthew Baker in 1595, receiving a thorough grounding in the more scientific techniques which Baker had brought to the art of ship construction. In an age when every contract depended upon patronage, Pett secured the support of the powerful Lord Charles Howard, the Earl of Nottingham and Lord High Admiral from 1585 until 1619. In 1607 Howard

persuaded James to entrust to Pett the rebuilding of the *Victory* at Woolwich.

Matthew Baker's 'Ships Royal' 1557–1564 – construction history, burthen tonnage and dimensions in feet

VESSEL	BUILDER	BUILT	REBUILT	TONS	KEEL	BREADTH	DEPTH
Elizabeth Jonas	Matthew Baker, Woolwich Dyd	1557-1559		740	100	40	18
			1597-98	684	100	38	18
Triumph	Matthew Baker, Woolwich Dyd	1561-1562		741	100	40*	18*
			1595-96	760	100	40	19
White Bear	Matthew Baker, Woolwich Dyd	1563-1564		727	110*	38*	17*
			1598-99	732.6	110	37	18

* Estimated (to the nearest foot)



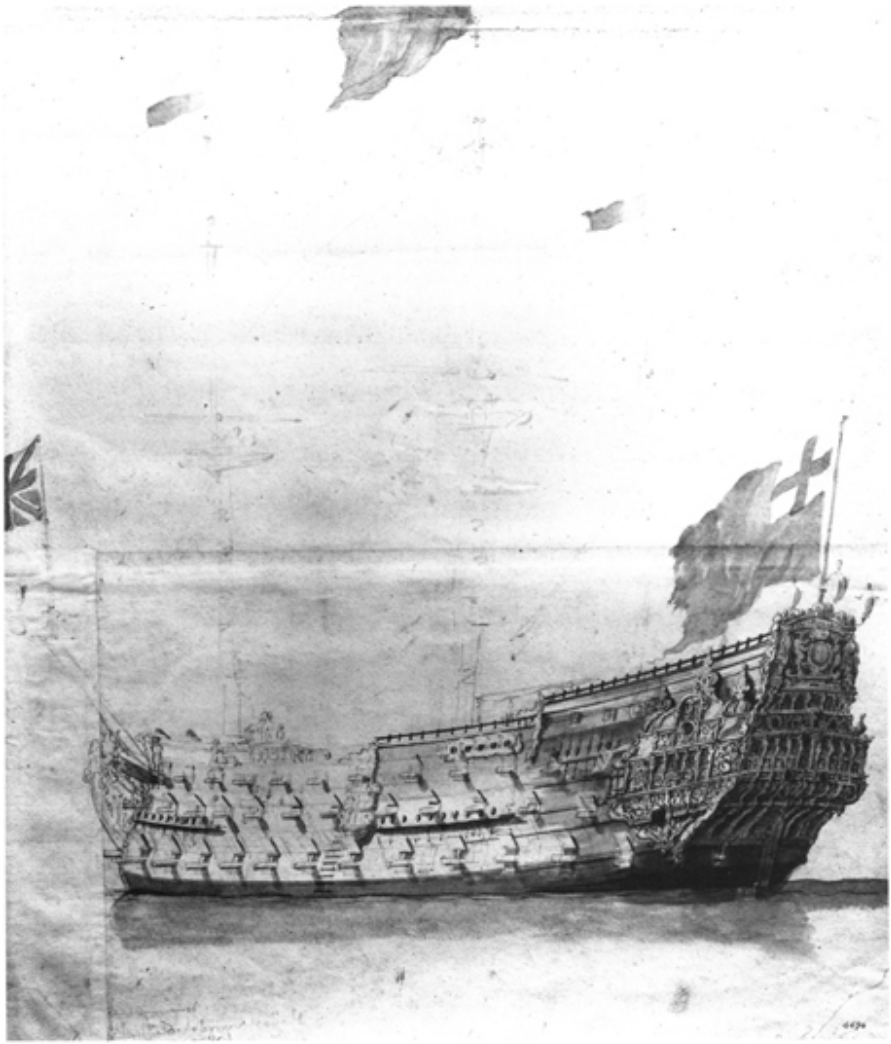
ONE of the Elizabethan 'Ships Royal' that survived into the reign of James I, the *White Bear* is shown in this engraving by Claes Visscher. One of a series supposedly devoted to ships that fought against the Armada, the technical details are not to be relied upon, even for the ship as built, and certainly not after her reconstruction in 1598–99.

Given the age of the ship, Pett decided that it would be better to replace the *Victory* than to rebuild her. Following the arrival of peace with Spain, little had been done to modernise the navy: two smaller galleons had been rebuilt, and Pett had already been allowed to rebuild the *Ark Royal* – which had been Howard's flagship against the Armada – at Woolwich. Pett knew what initiative had enabled him to secure that responsibility – on Howard's instruction he had built a 28ft long model of the *Ark Royal* showing how she would look after rebuilding, and he now determined to use the same ploy. No new

warship had been sanctioned since James's accession to the throne, so he would need to ensure the monarch's support.

Accordingly Pett built a model of how he believed the new warship should appear, and arranged for Howard to take him and the model along to Richmond Place, where he presented it as a gift to Henry, the 10-year-old Prince of Wales. Henry was entranced by the model, and hastened to show it to his father. James confessed himself equally delighted, and closely questioned Pett as to its features, asking the shipwright if and how it could be built. The upshot was that Pett was instructed in November 1607 to build a new *Victory* instead of rebuilding the old ship.

THIS 1623 painting by Vroom was done after the *Prince Royal* underwent major refits in 1621 and 1623, and shows uninterrupted rows of guns on each level, confirming that her gundecks were flush from bow to stern. However, the upper deck remained lightly armed, with sakers mounted under the quarterdeck and in the bows (over which a rudimentary forecastle platform was to emerge), and neither gun nor gunports in the waist at this level. It portrays the ship returning with Prince Charles from Spain on 5 October 1623.
[NMM BHC0710]



THE *Royal Prince* as she appeared about 1661, soon after the name was restored. Her appearance had changed during her 1641 rebuilding, when her stern was altered and further embellishments made to her decoration. In this state she had been extensively used as a flagship during the First Anglo-Dutch War, and by 1661 was in need of a major refit. She was taken in hand at Woolwich and her keel was radically extended, with the rake of her stem being much reduced. By now she had almost doubled her original complement of 51 major guns (and 4 smaller ones), and carried 92 guns and 600 men in total. Samuel Pepys was aboard as she was re-launched on II July 1663, reporting it was raining hard.

Pett faced great opposition from the naval establishment, even from his former mentor Matthew Baker, who questioned whether the ship could be safely built in the form that Pett envisaged. He faced a barrage of criticism, both as regards the new ship and about his own ability and integrity, but nevertheless survived the inquisition and

finally laid down the elm keel of the new warship in Woolwich Dockyard in October 1608.

THE *PRINCE ROYAL*

The new ship would be the largest in the navy, initially estimated to be of some 1200 tons burthen, with a keel 115ft long, and a breadth of 43½ft. But it was not the largest warship to be built in England up till then. As far back as 1415 Henry V had ordered the construction of a large and powerful warship designed to protect his lines of communication across the narrows of the English Channel. Named the *Grace Dieu* in celebration of his recent battle, she measured 184ft along her deck, and 50ft in breadth, and was built in Southampton by a master shipwright named Huggekyns between 1416 and July 1418. Henry VIII's prestigious *Henry Grâce à Dieu* (popularly called the *Great Harry*), a huge four-master, begun in 1514 and completed in 1516, allegedly measured 1600 tons when first built (on rebuilding in 1539–40, now with a double tier of gunports, this was reduced to a more modest 1000 tons). However, Pett's creation was undoubtedly the largest English ship built in almost a century.

Not only was the ship to be the first to carry two complete rows of guns, but she was also structurally a three-decker, with a complete upper deck, although at this time it carried only a few guns. In relation to decks, however, the term 'complete' requires some qualification: due to considerable sheer (the curve of a ship's structure upwards from the waist towards both bow and stern, particularly the latter), a continuous deck at this time would have risen to a level aft where heavy guns would have reduced the ship's stability. Consequently, in its first manifestation the lower deck of the vessel was stepped down by half a level as it approached the stern, so that the aftermost guns would be carried at the same height above the waterline as those in the waist.

In total, she would carry 51 heavy guns mounted on carriages – 6 demi-cannon, 12 culverins, 18 demi-culverins and 13 sakers, as well as 2 antiquated cannon-perriers for throwing stone shot, plus 4 smaller port-pieces (wrought-iron weapons on swivel mountings for anti-personnel use). While no record exists of the disposition of this ordnance, it is probable that the larger and heavier demicannon, culverins and perriers were carried on the lower deck, the demi-culverins on the middle deck, and the sakers on the upper deck, the latter bearing guns only below the quarterdeck and forecastle, so that this deck was unarmed in the open waist.

Inevitably, the form of the ship was a transitional stage between the

Elizabethan galleon and the future ship of the line. In appearance it is clear that Pett's ship was a traditional galleon in profile, with a pronounced low beak, a high beakhead bulkhead in front of a prominent forecastle, and an upwards-sloping quarterdeck and poop. Her rig seemed retrograde, with a fourth (bonaventure mizzen) mast, whereas the *Merhonour* and other Great Ships of the 1590s had dispensed with this and were three-masted. Both the mizzen and bonaventure masts carried a simple lateen sail, with no topsails; only the fore and main masts carried square courses (lower sails), topsails and topgallants.

After facing further criticism and inquiries, the last chaired by the king himself, the construction in the dry-dock at Woolwich continued and on 24 September 1610 the ship was ready to take to the water. The king, with Prince Henry and his entourage attended the ceremony; and it was agreed that, instead of *Victory*, the new ship should bear the name. *Prince Royal* in honour of its young advocate. Sadly for Pett, when the dock gates opened and the dock flooded, the ship floated against the gates and grounded. The royal party departed while Pett desperately prepared to install a system of pulleys to haul the ship off at the next high tide. By midnight the preparations were made, and Prince Henry and Lord High Admiral Howard returned to the dockyard where, shortly after 2am on 25 September, the ship was pulled free and finally christened by the Prince.

As with all the prestige ships of the seventeenth century, the *Prince Royal* was lavishly decorated, with elaborate carvings and extensive gilding. Her prow carried a figurehead of a mounted Saint George with his sword raised high to do battle against tyrannical dragons. She typified the capital ship of the period, designed to impress and overawe all potential rivals. Sadly, barely two years after her christening, the young Prince after whom she was named died of typhoid, and his younger brother Charles became heir to James's throne.

For all her impressive statistics, which silenced those who had challenged Pett's competence, the new super-ship had flaws which came to light over the next decade. To some degree this can be attributed to the notorious corruption within the dockyards, which led to the Commission of 1618, but by 1621 the *Prince Royal* had to be docked for a major refit, at the cost of £6000, partly to replace rotten timbers that had been used in her construction, but also to correct some of the design flaws. She emerged with notably reduced sheer, so that the stepped-down deck aft could be altered and for the first time the ship had completely flush decks from stem to stern; the open waist was also filled in, with additional guns to produce three continuous tiers. Another lesser refit (for under £1000) followed in 1623, with the

cookroom relocated from a platform in the hold to a new position under the forecastle (a move Pett strongly resisted).

Charles I succeeded his father in 1625, and following this the formal classification of the king's ships as altered so that the Royal Ships were designated 'First Rank' ships, while the other Great Ships, Middling Ships and Small Ships were categorised as 'Second Rank', 'Third Rank' and 'Fourth Rank' respectively. The word 'Rank' would subsequently be altered to 'Rate', while the smallest rate would, by mid-century, be split again into Fourth, Fifth and Sixth Rates. The surviving four Royal Ships of 1618 thus became the First Rates of 1626.

At this date the distinction between the Ranks was based on their approved complement of men, with First Rank ships carrying a complement of at least 400 men.

Even the largest vessels at this time still carried only a relatively small number of major guns. Each of the Royal Ships carried between 40 and 51 truck-mounted guns at this date (excluding 4 anti-personal 'port-pieces' or antiquated wrought-iron antipersonnel weapons that were mounted on the partial decks). In 1624 each mounted some 20 guns on the lowest deck, comprising 6 demi-cannon, 2 obsolescent 'cannon-petro' (perriers, throwing stone projectiles instead of cast cannonballs), and 12 culverins; on the second tier they carried between 12 and 18 demi-culverins, with between 8 and 13 sakers on the upper deck.

THE *SOVEREIGN OF THE SEAS*

Just as the *Prince Royal* had been the prestige vessel of James I's reign, in 1634 Charles I sought to enhance his standing by commissioning the largest warship yet built. In January 1635 he instructed Phineas Pett, the builder of the *Prince Royal*, to travel to the north of England to procure suitable timber to build a new Great Ship at Woolwich. Having the materials secured, and the frames cut and shipped in colliers from Newcastle and Sunderland, in May the King then asked Pett to undertake the construction, but Phineas handed over the leading role to his son Peter, who had been born just six weeks prior to the launch of the *Prince Royal*.

Between them, father and son designed a monster vessel which far overshadowed anything that had been built previously, capable of carrying 90 heavy brass guns on three continuous flush decks – 20 cannon-of-seven and 8 demi-cannon on her lower deck, 30 culverins on her second tier (middle deck), and 28 demi-culverins on the third tier (upper deck), with another 4 demi-culverins on the partial decks

above. Even this failed to satisfy Charles, who demanded – a year after her launch – that his new flagship should bear more than a hundred guns to reinforce his claims to sovereignty over the neighbouring seas (her chosen name precisely demonstrated his purpose), so the Petts added a dozen extra demi-culverins on the quarterdeck and forecastle to satisfy him. The keel was laid on 21 December 1635.

'Ships Royal' (subsequently 'First Rates') 1587–1590 – construction history, burthen tonnage and dimensions (in feet and inches)

VESSEL	BUILDER	BUILT	REBUILT	TONS	KEEL	BREADTH	DEPTH
Ark Royal	Richard Chapman, Deptford Dyd	1587		565	100 0	37 0	15 0
	Phineas Pett, Woolwich Dyd		1607-08*	621	107 0	37 10	17 0
Merhonour	Matthew Baker, Woolwich Dyd	1588-1590		692	110 0	37 0	17 0
	Phineas Pett, Woolwich Dyd		1612-15	732.6	112 0	38 7	16 5

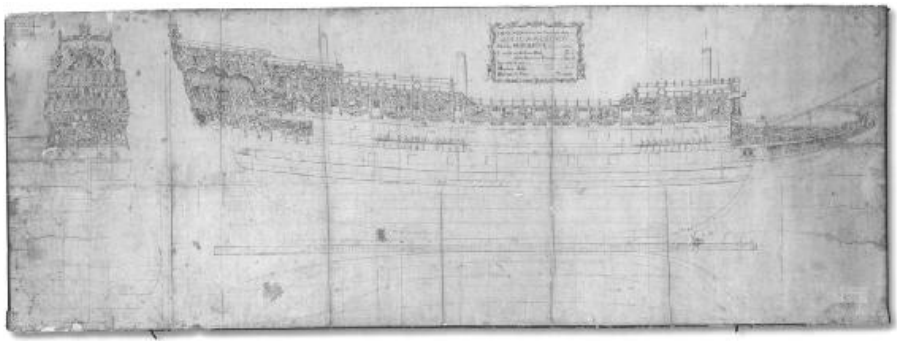
* as *Ark Royal*

JOHN Payne's well-known contemporary engraving was described as a 'True Portrait of His Majesty's ship the *Sovereign of the Seas*'. The playwright Thomas Heywood, who designed much of the decoration (actually carved by John and Matthias Christmas), described her ornate carvings as 'gilded quite over, and no other colour but gold and black to be seen about her'. He continued, 'She hath three flush decks and a forecastle, an halfe deck, a quarter deck and a round house. Her lower tyre [tier] hath thirty ports, which are to be furnished with demi-cannon and whole cannon, throughout being able to beare them; her middle tyre hath also thirty ports for demi-culverin and whole culverin; her third tyre hath twentie sixe ports for other ordnance; her forecastle hath twelve ports, and her halfe deck hath fourteen

ports; she hath thirteen or fourteen ports more within board for murdering pieces, besides a great many loope-holes out of the cabins for musket shot. She carrieth moreover, ten pieces of chase ordnance in her right forward and ten right aft, according to lande service in the front and reare.'
[NMMA6719]

THE stern of the *Sovereign of the Seas*, from Sir Peter Lely's portrait of the shipwright Peter Pett, standing proudly before his creation. One would imagine Pett insisting that the artist accurately portrayed the *Sovereign*'s fantastically ornate and gilded carved work of her stern, surmounted by its enormous (and expensive) lantern. At lower deck level are four gun-ports, with two more at middle deck level. The painting also demonstrates the length of the principal spars; the main yard was 113½ft long (6in longer than the lower mast itself) and had a diameter of 28¼in at the slings (its midpoint); the fore yard was only slightly shorter at 86ft (the lower foremast was 95½ft long) with a diameter of 21½in at its midpoint.

[NMM BHC2949]



FEW early seventeenth-century draughts survive (and none of identifiable ships), so the source for this nineteenth-century plan of the *Sovereign of the Seas* is a mystery, although it does come from the official Admiralty collection. It may be based on the famous Payne engraving, with which the decorative work generally agrees, but the motifs are rendered more precisely and in more detail on the draught. It is known that Sir Robert Seppings, when Surveyor, commissioned a model to be built of the ship (now at the National Maritime Museum, Greenwich), but there is a separate draught which seems to be the building plan for this model. Whatever its provenance, as a scaled draught it gives a valuable insight into the layout of the first ever 100-gun ship, although it is wrongly based on the dimensions of the 1701 *Royal Sovereign*. Her appearance still bears traces of the galleons from which the type sprang, particularly in the prominent beak at the bows. She was the first warship ever to be designed to carry three complete banks of carriage guns – earlier 'three-deckers' had few guns on the upper deck, the waist in particular being bereft of gunports. Originally built to bear 90 guns, Charles I's determination to have a symbol of naval power that no other state could rival caused him to insist on visiting the ship on 7 December 1638 that his immense flagship should carry more than 100 guns, so a dozen more were added on her quarterdeck and forecastle.
[NMM J1999]

In appearance, the ship still retained some characteristics of the Tudor galleon. While dispensing with the obsolete fourth (or bonaventure mizzen) mast, she still had an additional level aft – a half-deck, intermediate between her upper deck and quarterdeck. Moreover, she retained, as completed, the long low beak structure forward, typical of the galleon.

The *Sovereign of the Seas* was undoubtedly the first English ship designed to carry three full tiers of guns, and the *Prince Royal* was certainly a three-decker in the structural sense (even if she carried relatively few guns on her upper deck), but neither was the world's first. There is evidence of earlier three-deckers built abroad: Sir Walter Ralegh, for example, described a Spanish three-decker called the *Philip* which he engaged in action off the Azores in 1591 as carrying 'three tier of ordnance on a side, and eleven pieces in everie tier'.

Immediately following the launch of the *Sovereign of the Seas* in October 1637, Peter Pett commenced a rebuilding of the *Prince Royal*

While it was not structurally possible to enlarge her much, she was able to carry a greater number of guns (initially 64, a figure which grew further over the years, as more guns were fitted on her upper deck and above). In this form, and renamed *Resolution*, she served as the flagship of the Commonwealth naval forces in several of the battles of the First Anglo-Dutch War of 1652–54, the larger *Sovereign* (the full version of the name was dropped in 1650) being under repair at Chatham at the start of that conflict. In 1651 the *Sovereign* had been considered to be crank (top-heavy), and so her superstructure was cut down to improve her stability, with the topgallant poop being entirely removed. The shipwrights' recommendation (modernising the archaic spelling and punctuation) reads:

> First, as to the *Sovereign*, we conceive that – to make her more serviceable than now she is – the gratings and the upper deck in the midships be taken down, that the side [be] lowered to the upper edge of the ports in the midships; the upper stateroom to be taken away, the forecastle to be lowered to six feet high, and the works abaft be taken down proportionately to the mast and answerable to the sheer of the work fore and aft; the half deck [to be] shortened as shall be convenient, as also the head to be made shorter and so fitted for the sea; and the galleries to be altered as may be comely and most convenient for service.

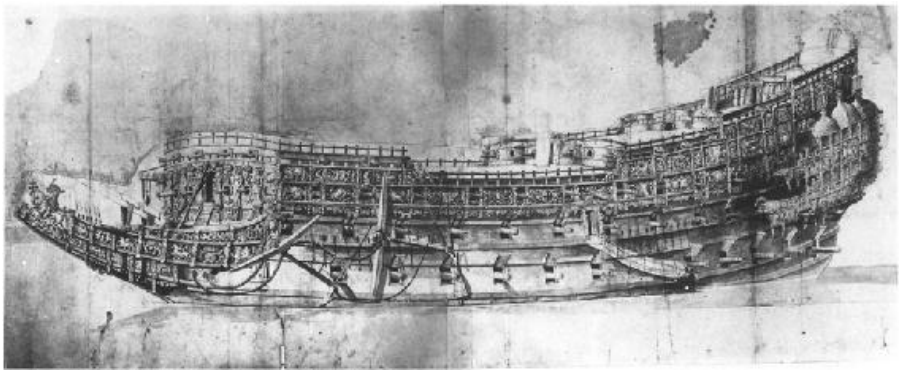
Recommissioned in time for the outbreak of war against the Dutch, the *Sovereign* took a severe pounding at the Battle of the Kentish Knock, and grounded towards the end of the action. Limping back to harbour, she spent the rest of that war out of service.

THE ENGLISH COMMONWEALTH AND THE FIRST ANGLO-DUTCH WAR

Following the Civil Wars of the 1640s and the execution of Charles I, the new Commonwealth government decided on New Year's Day 1650 to rename those ships indelibly associated with the former monarchy. Accordingly the *Prince Royal* became the *Resolution*, while the *Sovereign of the Seas* had its name shortened to just *Sovereign*.

In September 1651 the Commonwealth Parliament passed the notorious Navigation Act, banning all foreign merchantmen from carrying cargoes to English ports except from their own country. Conflict with the United Provinces of the Netherlands, whose traders had been transporting 90 per cent of English sea trade, was inevitable. The Dutch refused to accept English attempts to search Dutch ships for

goods carried in contravention of the Act, and the dispute broke out into naval warfare during the summer of 1652. The first encounter, even prior to the formal declaration of war, took place in May off Dover, when an English squadron under General-at-Sea Nehemiah Bourne and one under his colleague Robert Blake clashed with the much larger Dutch fleet under Luitenant-Admiraal Maarten Tromp. Bourne's squadron included the 60-gun *Triumph*, built as a Second Rate in 1623 but recently re-classed as a First Rate as a temporary replacement for the discarded *Merkonour*.



THE *Sovereign of the Seas* as she originally appeared, in a detailed portrait by Willem Van de Velde the Elder. It was drawn around 1660, so may have been based on earlier sources such as the engraving by John Payne, because by that time the ship's appearance had been much altered by rebuilding. In 1651 the long beak was replaced by a shorter and more sea-kindly structure, while the forward extension of the quarter gallery on the middle deck was removed. Much of the excessive superstructure was removed, giving her less topside height; the topgallant poop was removed entirely, and the forecastle and quarterdeck were cut back to give an extended waist. As first built she had been an enormous vessel, her 46½ft beam and 23½ft draught being larger than any other seventeenth-century warship; these changes rendered her very stable, and more seaworthy, but she remained so deep that she was sometimes in danger of grounding, as happened during the Battle of the Kentish Knock, where she suffered considerable damage.
[BY COURTESY OF FRANK FOX]

All three First Rates took part in the actions of the following two years, but the *Sovereign* saw only limited service. Recommissioned in 1652 under Captain Nicholas Reed, she took part in the Battle of the Kentish Knock on 28 September but saw no further action. The *Resolution* served as the flagship of Robert Blake in that battle; in the subsequent action off the Gabbard shoal in June 1653, now under Captain John Bourne, she served as the flagship of the joint commanders, the Generals-at-Sea George Monck and Richard Deane, although Deane was killed early in the battle. Eight weeks later, the opposing fleets clashed again off Scheveningen, with *Resolution* still being Monck's flagship.

‘Ships Royal’ (subsequently ‘First Rates’) 1610–1650 – construction history

VESSEL	BUILDER	LAID DOWN	LAUNCHED	FATE
Prince Royal	Phineas Pett I, Woolwich Dyd	20.10.1608	25. 9.1610	Rebuilt from 1639 to 1641
Royal Sovereign	Peter Pett I, Woolwich Dyd	21.12.1635	14.10.1637	Rebuilt from 1659 to 1660
Prince Royal (Rebuilt)	Peter Pett I, Woolwich Dyd	1639	14.10.1641	Rebuilt from 1661 to 1663

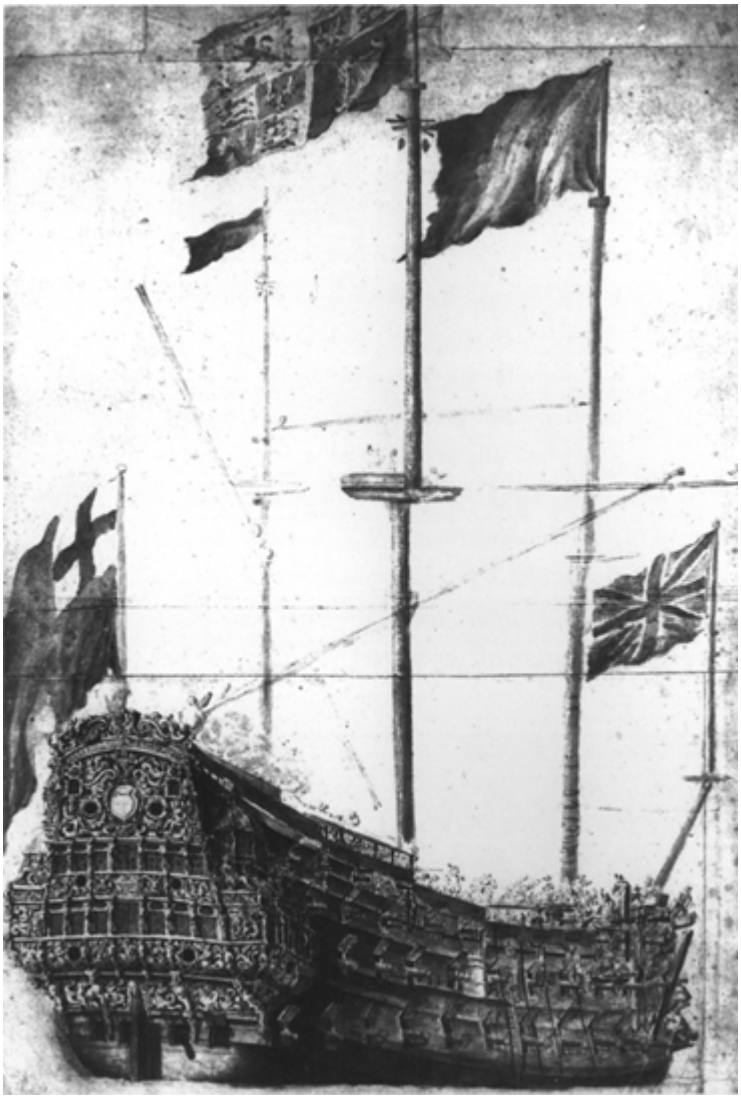
‘Ships Royal’ (subsequently ‘First Rates’) 1610–1650 – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS[1]
Prince Royal		115 0	43 6	18 0	1157 $^{48}/_{94}$
Royal Sovereign					
– original design		124 0	46 0		1395 $^{62}/_{94}$
– as completed	167 9	127 0	46 6	18 9	1460 $^{62}/_{94}$
Prince Royal (Rebuilt)		115 3	44 0	18 0	1184 $^{24}/_{94}$

[1] as recalculated on 'tvib²/94' rule, not by previous (Baker's) Rule, in order to provide comparison with later figures.

JUSTIFIABLY famous, Abraham Storck’s dramatic rendition of the Four Days’ Battle epitomises the scale and intensity of the Anglo-Dutch encounters at sea. His view depicts no specific incident in a wide-ranging and drawn-out engagement that took place over a substantial area of the southern North Sea, but it centres on the *Royal Prince* during one melée. The Duke Albermarle’s fleet, outnumbered by the Dutch under de Ruyter, initiated the action on the first day, and renewed it on the second after the two forces separated overnight. But by the close of that day the Dutch superiority proved conclusive, and the English forces were compelled to withdraw into the Thames Estuary. The *Royal Prince* would be lost on the third day, but by that evening Albemarle’s fleet had been joined by Prince Rupert’s squadron, which during the previous days had been absent pursuing a French force which was

believed to be intending to join with the Dutch. The French had not been located, and with the reinforcement of Rupert's squadron the protracted battle staggered to an inconclusive finish.
[NMM BHC0286]



THIS Willem Van de Velde (the Elder) drawing shows the former *Naseby* as she appeared following the Restoration in May 1660. As flagship of the fleet which carried the restored monarch from Holland to England, the ship was renamed *Royal Charles* in his honour. Captain Roger Cuttance had commanded the ship ever since she was first commissioned in 1656, and initially maintained his responsibility under the new regime, but in 1661 was transferred to command the *Royal James*. The *Royal Charles* had an active role during the Second Anglo-Dutch War until December 1666 when, like most of the Navy's principal ships, she was decommissioned as finance for the war dried up. Lying in the Medway below Chatham, she suffered the ignominious fate of being captured during the Dutch raid in June 1667 and sailed

back to Holland as a trophy.
[SCHEEPVAART MUSEUM, AMSTERDAM]

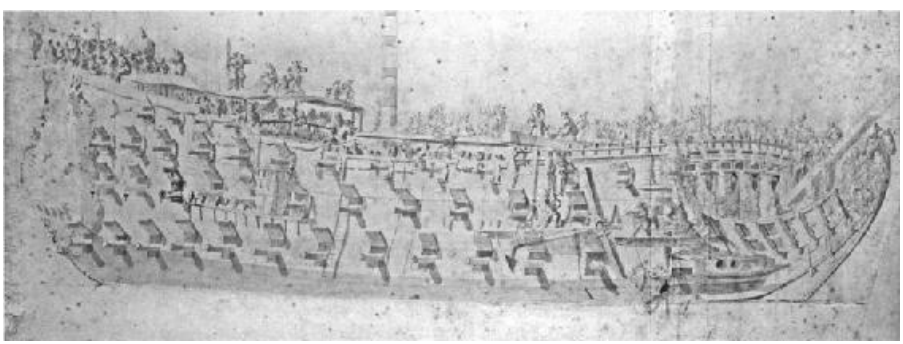
Expansion of the naval forces of the new republic, which had begun soon after the Commonwealth was established, continued throughout the war. Initial construction concentrated on Third and Fourth Rate 'frigates', but as the war continued deliberations began on building new capital ships. On 3 July 1654 the Council of State issued an order to build four Second Rank ships. The Admiralty Committee on 3 August ordered the Master Shipwrights at Chatham, Woolwich and Deptford to prepare draughts for 60-gun ships and assemble timber to build them. All were to be three-deckers, although on the upper deck only a partial battery was included, with guns mounted aft under the quarterdeck, and others forward of the unarmed waist. The first three of these Second Rates were the *London, Naseby* and *Dunbar*, while the fourth ship (the *Richard*) was not ordered until 1656, again from Woolwich. The original design for all four ships was to have a keel length of 120ft, a breadth of 38ft 4in and a depth in hold of 15ft 9in, producing a tonnage of 938 bm (Builder's Measure).

Although all four were ordered as Second Rates, it was decided early on to alter the 1654 programme to include a First Rate suitable as a major flagship, the logical choice being the ship building at Woolwich, the leading dockyard. Accordingly the *Naseby* was enlarged during construction and was redesignated as a First Rate. When completed, the ship was quoted as having a breadth of 42ft, and thus a tonnage of 1229 bm, being 7ft longer on the keel and some 18in broader than her intended sisters. These were all completed as Second Rates, each with thirteen pairs of lower deck gunports, twelve pairs on the middle deck, ten pairs on the upper deck – three forwards and seven aft of the unarmed waist – and (later) five pairs on the quarterdeck. In the larger *Naseby*, the upper deck was fully armed, with extra gunports in the waist.

Besides being larger, the *Naseby* was also more heavily armed than the three Second Rates. While the latter carried a mixed battery of cannon-of-seven (42-pounders) and demi-cannon (32-pounders) on their lower decks, the First Rate had a complete set of fortified cannon-of-seven cast specially for her while under construction. As much an emblem of power for the Protectorate as earlier (and later) First Rates were for the Crown, her figurehead consisted of the politically symbolic representation of Cromwell bestriding six nations. Initially commissioned in 1656 under Captain Roger Cuttance, she served as the joint flagship of Generals-at-Sea Robert Blake and Edward Montagu (then of Montagu alone from October 1656). She spent most of 1658 out of commission, and seemingly during this time her hull was girdled (extra layers of timber were added to her sides to

improve stability), increasing her breadth to 42ft 6in, and thus her tonnage to 1258 bm.

In May 1660 the monarchy was restored, and the Commonwealth emblems were renamed. The *Sovereign* acquired the *Royal* prefix, and the *Resolution* reverted to being the *Royal Prince*. The *Naseby*, recommissioned under Cuttance again and Montagu's flagship, was the ship which transported the victorious Charles II from Holland to England, and had the name *Royal Charles* bestowed upon her as a consequence. Of her three original sisters that had been completed as Second Rates, the *Richard*, bearing the name of Oliver Cromwell's son and short-term successor, was renamed *Royal James* in honour of Charles's brother, who was now appointed Lord High Admiral. The ship was reclassed as a First Rate and converted to carry a larger armament, her upper deck acquiring two extra pairs of gunports for an extra 4 guns in the waist. Nevertheless, her relatively small size still associated this fast and weatherly ship more closely with the Second Rates. She was completed with a mixed armament of 12 cannon-of-seven and 14 demi-cannon on her lower deck, but in 1664 the cannon-of-seven were removed and she subsequently carried just 24 demi-cannon (and 2 culverins) on her lower deck, like most of the Second Rates.



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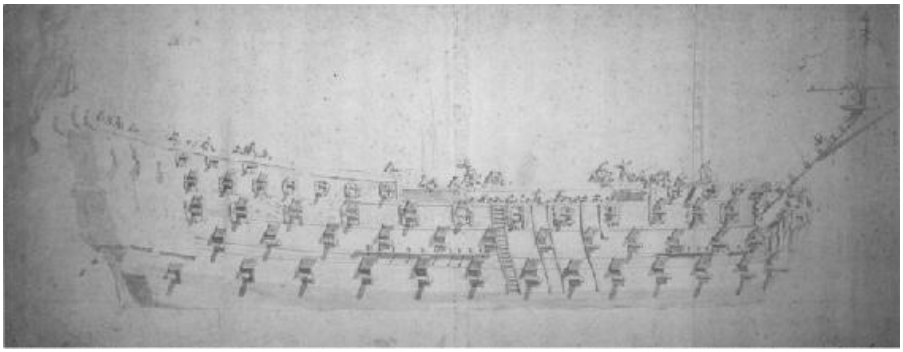
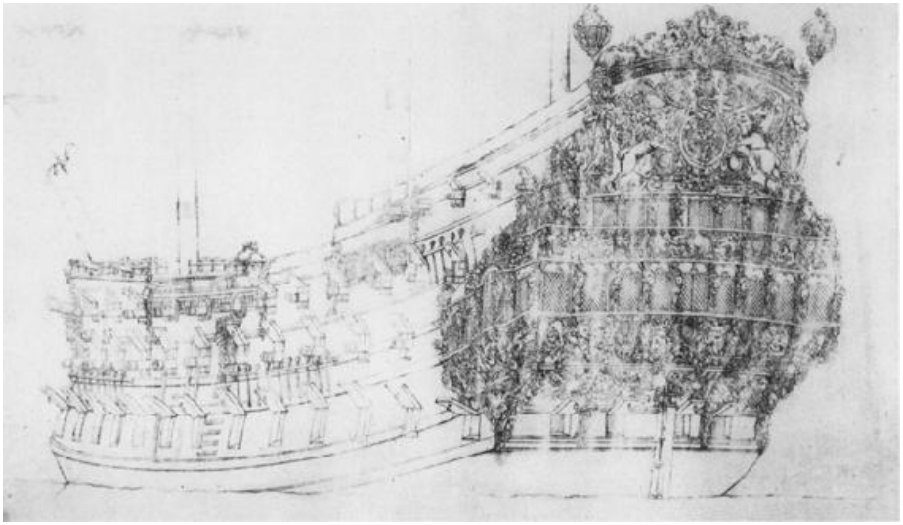
[SCHEEPVAART MUSEUM, AMSTERDAM]



A later view of the *Royal Sovereign*. She had been active throughout the Third Anglo-Dutch War, by which time her armament had been raised from 92 to 100 guns.
Recommissioned in January 1672 under the flag of Sir Joseph Jordan, she fought in the Battle of Solebay in May. She was present at both battles of Schooneveld a year later, and served as Prince Rupert's flagship in the second battle, a role she repeated off the Texel in August 1673. By 1675 (to when this drawing is dated) she had been laid up at Chatham, where she remained until funds were available to enable her to be rebuilt from 1680 onwards.
[NMM PT2302]

The *Royal Sovereign* had been rebuilt in 1659–60, and the *Royal Prince* was similarly rebuilt from 1661 to 1663. Each of them, as well as the *Royal Charles*, now carried 26 cannon-of-seven on the lower deck, but in May 1664 it was decided to provide them with demi-cannon in the chase positions fore and aft on this deck, mainly because the Ordnance Board lacked enough cannon-of-seven for each First Rate to mount a complete battery of these.

Under the Establishment of Guns prepared in 1666, the *Royal Sovereign* and *Royal Prince* were each rated to carry 92 guns – 22 cannon-of-seven, 6 demi-cannon, 28 culverins and 36 demi-culverins. At that date the *Royal Sovereign* actually carried 102 guns – 13 cannon-of-seven, 13 demi-cannon, 36 culverins and 18 demi-culverins, plus 22 sakers; and in July her Establishment was raised from 92 to 102 guns to reflect this. The actual guns aboard the *Royal Prince* at this date are uncertain, but Dutch records following her capture seem to indicate that she probably carried 16 cannon-of-seven, 16 demi-cannon, 30 culverins and 16 demi-culverins, plus 14 sakers. Both ships following their recent rebuildings had thirteen pairs of lower deck gunports, the same number on the middle deck, and twelve pair on the upper deck, to give a total of 76 ports on these three decks – closely matching the number of guns actually carried if sakers are discounted (which were presumably mounted on the quarterdeck and forecastle).



A VIEW from the port quarter of the *Royal James* (built in 1658 as the Second Rate *Richard*) as drawn by the elder Van de Velde shows the ship after conversion at the start of the 1660s. The upper deck was now fitted with additional gunports in the waist so that she carried 82 guns like the *Royal Charles*, albeit that she was a much smaller ship (7ft shorter and 18in narrower). Consequently the weight of guns she could safely carry was less than the other First Rates, and in 1664 the twelve cannon-of-seven (42-pounder guns) on her lower deck were removed and replaced by ten demi-cannon (32-pounder guns) to give her a uniform battery of twenty-four such guns on this deck, plus two culverins which were presumably carried in a chase position. Despite her less than first class armament, she was Prince Rupert's flagship during the Four Days' Battle, where Dutch gunfire brought down her main topmast and mizzen mast, plus the attached yards, badly crippling her.
[BOYMANS VAN BEUNINGEN MUSEUM, ROTTERDAM]

The slightly smaller *Royal Charles* had 82 guns established in 1666 (up from 78 a year before) – 20 cannon-of-seven, 6 demi-cannon, 26 culverins and 30 demi-culverins, while the *Royal James* was allowed the same number, but 22 demi-cannon, 26 culverins and 34 demi-culverins; the actual ordnance carried by these two ships was exactly as per their establishments, except that the *Royal James* had one more pair of demi-cannon and one fewer pair of demi-culverin than her establishment. Both ships had one fewer pair of middle deck gunports, to give a total of 74 ports on the three continuous decks, and the lack of sakers mentioned in respect of them indicates that the quarterdeck and forecastle were virtually unarmed, notwithstanding the ports provided there.

First Rates under the Commonwealth and early Restoration – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Naseby / Royal Charles		131 0	42 6	18 0	1258 $^{57}/_{94}$
Richard / Royal James		124 0	41 0	18 0	1108 $^{79}/_{94}$
Royal Sovereign (RB)	167 9	127 0	47 10	19 2	1545 $^{68}/_{94}$
Royal Prince (RB)		132 0	45 2	18 10	1432 $^{33}/_{94}$

First Rates under the Commonwealth and early Restoration – construction history

VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Naseby / Royal Charles	Peter Pett I, Woolwich Dyd	3. 7.1654	12. 4.1655	Taken by the Dutch 12.6.1667
Richard / Royal James	Christopher Pett, Woolwich Dyd	3. 7.1654	26. 5.1658	Burnt by the Dutch 14.6.1667
Royal Sovereign (RB)	John Taylor, Chatham Dyd	1659	26. 8.1660	Rebuilt 1680 to 1685
Royal Prince (RB)	Phineas Pett II, Woolwich Dyd	20. 6.1661	11. 7.1663	Taken by the Dutch 3.6.1666, burnt

THIS model depicts the *Naseby* as originally built, still with the English Commonwealth's arms on the stern. The ship was at first intended as a Second Rate (one of four ordered Cromwell's government), but redesigned as a First Rate while on the stocks at Woolwich by Commissioner Peter Pett (son of Phineas). Although enlarged from her planned dimensions, she was significantly smaller than the *Sovereign*, and only carried 80 guns when first completed. Oliver Cromwell's pretentious figurehead (showing the Lord Protector in regal pose) enraged the Restoration leadership that followed in 1660, and in December 1663 this was removed and replaced by a more acceptable effigy of Neptune carrying a trident, and seated in a seashell drawn by two seahorses.

Three of England's four First Rates were lost during the hard-fought Second Anglo-Dutch Wan During the lengthy battle in the southern North Sea during the first week of June 1666, known as the Four Days. Battle, the English fleet conducted a fighting retreat towards the Thames. The *Royal Prince*, flagship of Admiral Sir George Ayscue, grounded on the Galloper Sand (as did other ships including the *Royal Charles* and Second Rate *Royal Katherine*, but these all managed to free themselves). Stuck fast, the *Royal Prince* was surrounded by Dutch warships and compelled to surrender. While undamaged (hardly a shot was fired), the Dutch also found that she could not be moved, and consequently set fire to her.

A year later, with the majority of the English fleet laid up in the Thames and Medway, the Dutch staged a large raid. On 12 June the Dutch seized the undefended *Royal Charles*, lying off Gillingham, and triumphantly carried her off to Holland. There she was put on display at Hellvoetsluis for several years before being broken up in 1673. On the following day, 13 June, they encountered the *Royal James*, which had been partly scuttled in shallow water just below Chatham to prevent her being taken. She was set ablaze and burnt to the waterline. Several other large warships – including several Second Rates – were also burnt in this humiliating blow to English pride. Of the largest ships only the *Royal Sovereign*, away in Portsmouth, escaped the debacle. Along with three Second Rates and eight smaller line of battle ships (all Third or Fourth Rate prizes), this raid produced the greatest single loss of capital ships the navy was to face during the entire age of sail. After the Dutch wars no other First Rate would ever again be lost to enemy action.

CHAPTER

2

The Pepysian Age

THIS oil portrait by the younger Willem Van de Velde shows the *Saint Andrew* at sea in a moderate breeze. The younger painter routinely produced his oil paintings from drawings sketched at sea by his father. This highly successful vessel was relatively beamy in relation to her length, and hence more stable, never requiring

the girdling needed for some other three-deckers. This ship was a replacement for the elderly 66-gun Second Rate of the same name – one of Burrell's Great Ships built in the early 1620s, which had been wrecked in a gale in September 1666. She was the last major English warship to be completed with square wreaths around her upper deck gunports.
[NMM BHC 3618]

THE triple main wale of this model is unusual, although one of the drawings in Deane's 'Doctrine of Naval Architecture' (1670) shows it. However, it probably does not represent a Deane design, and apart from some of the decorative details, in most important respects it resembles the *Saint Andrew*. It clearly shows that ship's gunport disposition of 14 lower, 13 middle and 14 upper deck gunports on each side. Furthermore, as in the model, the foremost pair of ports on the lower deck was so far forwards that guns were probably never employed here. Like her, near-sister *London* from the same shipyard, she was established to carry 26 cannon-of-seven, 28 culverins and 26 demi-culverins, with 12 sakers on her quarterdeck and forecastle, plus 4 small 3-pounders on the poop. By 1685 she seemingly had 2 fewer culverins and 2 additional demi-culvenns, more accurately equating to her gunports. Also like the *London*, she bore a lion figurehead.
[NMM F5805]

Within a few days of the loss of the *Royal Prince*, a petition was launched to raise money 'to build a ship in her place, and by her name yet bigger'. The replacement *Prince* would be launched at Chatham just 4½ years later. On 30 June the king and his council resolved to commence a programme often 'Great Ships', of which 'none to be under third-rates'. Estimates were prepared on 19 July for two Second Rates and four Third Rates, although few of these would materialise. It is unclear whether the new *Prince* and any other First Rates were

considered part of this programme, but besides the *Prince* at Chatham three new three-deckers were laid down at Deptford (two) and at Woolwich, all three being established on completion as 96-gun ships.

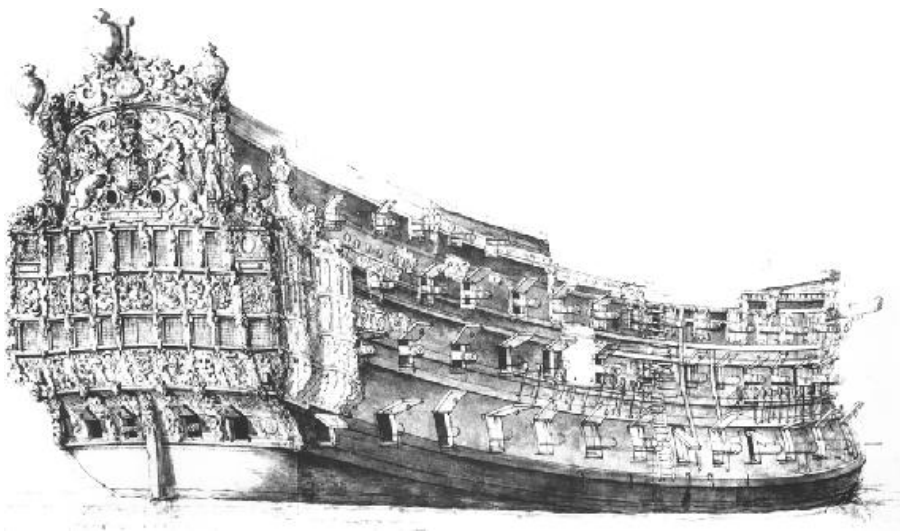
The Thames-built trio were similar in their proportions and in effect may be considered to constitute a single class. All three were begun while Christopher Pett served as Master Shipwright for both Deptford and Woolwich and certainly he was responsible for their design, but the Deptford ships seem to have been built by his assistant (and successor) Jonas Shish.

The Woolwich ship was designed by Christopher Pett, who began her construction but died on 22 March 1668, following which she was completed by Edward Byland, his assistant at Woolwich. The elderly Second Rate *Saint Andrew* having been wrecked in 1666, her name was allotted to the new ship at Woolwich. She was very similar to the Deptford-built *London*, but with an additional pair of upper deck gunports, and one fewer pair on the middle deck, so again providing for 92 guns on the broadsides. While her 1677 Establishment was the same as for the *Charles* and *London*, the 1685 Establishment, which probably better reflected her actual disposition of guns, provided for 26 guns on the lower deck (cannon-of-seven), the same number on the middle deck (culverins) and 28 guns on the upper deck (demi-culverins). The total of 96 was completed by 16 sakers (2 of them cutts) on the quarterdeck and forecastle; with only 5 pairs of ports on the quarterdeck, the remaining sakers were presumably positioned to fire over the head rails or astern. The actual survey of guns (1696) showed her still carrying 96, the only change being that 4 more demi-culverins had replaced 4 of the sakers.

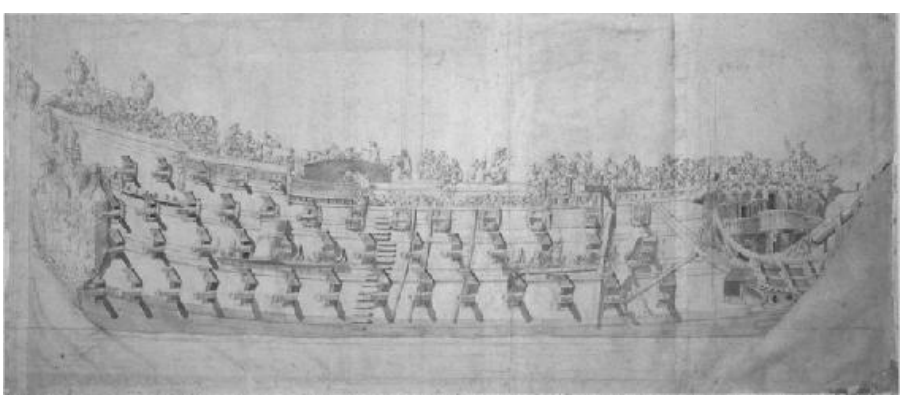
After the close of the Second Dutch War, two further First Rates were ordered to be built by Anthony Deane at Portsmouth Dockyard. Deane had previously built the successful Third Rates *Rupert* and *Resolution* at Harwich, and since being moved to Portsmouth in 1668 had already built the experimental Fifth Rate *Nonsuch* there. The design of these ships can be studied in Deane's influential 'Doctrine of Naval Architecture', written in 1670. In fact, not all his three-deckers were as impressive as his smaller warships, although they were fast and weatherly ships. Deane introduced novel features in his designs, such as fitting iron pillars and knees in the *Royal James* instead of using scarce and expensive compass timber.

This first ship, the *Royal James*, was certainly a tremendous success. It had originally been intended to rebuild the old ship of the same name, burnt in the Medway raid, but this proved impractical. Sadly she was to prove equally a victim of enemy torches, being destroyed by the Dutch at the Battle of Solebay just fourteen months after her launch and four months after being commissioned on 18 January

1672. Her first and only commander was Captain Richard Haddock, but she carried the flag of Admiral Edward Montagu, the Earl of Sandwich. At Solebay in May 1672, the flagship of the Blue Squadron was attacked by Dutch fireships, one of which – the *Vrede* – successfully set her alight and like her predecessor she burned to the waterline and sank. Haddock was among the few survivors, but Sandwich was lost with his ship.

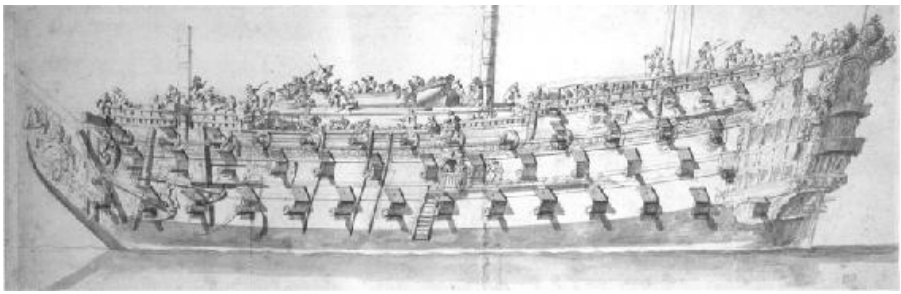


THE *London* was theoretically rebuilt from the remains of the 80-gun *Loyal London* of 1666, burnt during the Dutch raid of 1667 on the Medway. The elderly Jonas Shish undertook to rebuild her, but although the wreck was raised and taken to Deptford, in practice he probably broke up the remains and incorporated any usable material into a new ship of 96 guns. This portrait was drawn in 1675 by the elder Van de Velde.
[BOYMANS VAN BEUNINGEN MUSEUM, ROTTERDAM]



DRAWN by the younger Van de Velde about 1675, the *Charles* was built at Deptford

by Jonas Shish, the Assistant Master Shipwright there, but the design was probably the work of Christopher Pett, who as Master Shipwright oversaw both Thames-side dockyards' output. Her official name was *Charles the Second*, but the abbreviated form was generally used until 1687, when she was renamed *Saint George*. Her design seems to have been slightly enlarged from the shortlived *Loyal London*, a Second Rate built by contract at Deptford in 1666 but lost a year later. Although the ship's head is lost in the cropping of this drawing, the beakhead bulkhead clearly shows the curious – and unique – half-round galleries, like theatre boxes, that project from it.
[NMM PV3908]



ANTHONY Deane's second three-decker from Portsmouth, the *Royal Charles*, was probably begun from the same draught as the preceding *Royal James*, but as completed this ship was slightly longer and narrower than her sister. She served as Prince Rupert's flagship at the first Battle of Schooneveld in May 1673, but the prince shifted his flag to the *Royal Sovereign* for the second battle a week later, having found the *Royal Charles* to be unstable in action. Nevertheless, the *Royal Charles* also fought in that second battle, as well as in the subsequent Battle of Texel in August (when her captain, John Hayward, was killed). She was then taken in hand at Portsmouth and 'girdled' or widened by some 16 inches, resulting in a considerable improvement to her stability. Later in the decade she served at Vice-Admiral Sir John Kempthorne's flagship in the Channel during 1678, and was then reduced to guard duty at Portsmouth until being rebuilt in the 1690s.
[NMM PY9380-002]

The First Rates Programme of the Second Dutch War – construction history

VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Charles[1]	Jonas Shish, Deptford Dyd	30. 6.1666	10. 3.1668	Rebuilt from 1698 to 1701
Saint Andrew	Edward Byland, Woolwich Dyd	1667	4.10.1670	Rebuilt from 1703 to 1704 (as *Royal Anne*)
London	Jonas Shish, Deptford Dyd	15. 7.1667	25. 7.1670	Rebuilt from 1703 to 1708
Prince	Phineas Pett II, Chatham Dyd	8.1667	3.12.1670	Rebuilt from 1691 to 1692 (as *Royal William*)

[1] renamed *Saint George* in October 1687; re-classed as 2 (90-gun) Second Rate in 1691

The First Rates Programme of the Second Dutch War – dimensions in feet and inches

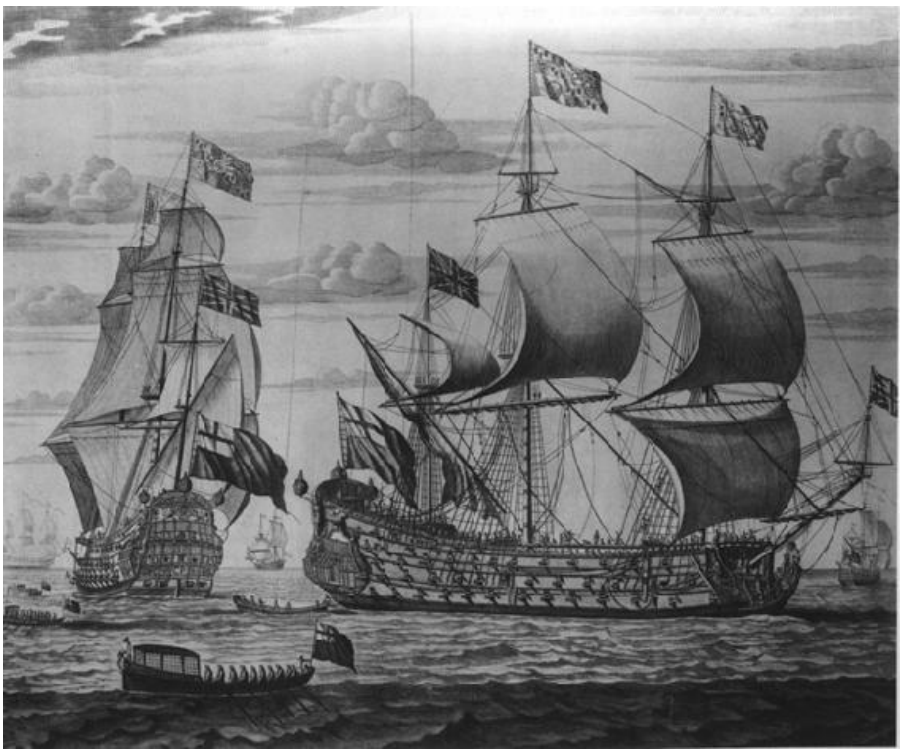
VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Charles	162 6	128 0	42 6	18 6	1229 $^{39}/_{94}$
Saint Andrew	159 0	128 0	44 0	17 9	1318
London	161 0	129 0	44 0	19 0	1328
Prince	167 3	131 0	44 9	19 0	1395 $^{37}/_{94}$
– later			45 9		1458 $^{43}/_{94}$

THE *Royal Prince* of 1670 (or simply *Prince* as she was commonly known) 'before the wind' is the subject of Jan Karel Donatus van Beecq's portrayal. The ship flies the royal standard at the main truck and the presence of two of the king's yachts suggests a royal visit to the fleet, possibly in June 1672 when the *Prince* was the Duke of York's flagship. Built by Phineas Pett (grandson of the earlier Phineas), this ship was a straight replacement for the *Prince Royal* lost in 1666. One of the ship's characteristic features, a small gallery covering only the centre four lights at upper deck level, can be seen projecting from the centre of the stern.
[NMM BHC0976]

A month after the launch of the *Royal James*, Deane received instructions to built a second ship of this rate. The *Royal Charles*, also named after the First Rate lost during the recent war, was similar and indeed may have been built to the same draught. The gunport configuration was apparently the same, with 14 pairs of gunports on the lower deck, the same on the middle deck, and 13 pairs on the upper deck (the establishment of guns provided 28 demi-culverins on this deck, indicating that the fourteenth pair were in the chase position, firing over the headrails), with 6 pairs on the quarterdeck and 2 on the poop. She was as fast and weatherly as her consort, but – being slightly narrower than the *Royal James* – she proved less stable and tended to roll badly.

The *Royal Charles* was commissioned on 2 February 1673. The

indomitable Haddock took command, and she became the flagship of Prince Rupert, Admiral of the Red. She took part in both Battles of Schooneveld, after which Haddock relinquished command to Captain John Hayward. During the first of these battles, in late May, the ship's instability became an obvious problem; she rolled so deeply that her lower gunports could not be opened. Prince Rupert transferred his flag to the *Royal Sovereign* before the second battle in early June, and the *Royal Charles* lost her flagship status. She fought as a 'private ship' (without a flag officer) in the Battle of Texel that August, where Hayward was killed and replaced by Sir John Holmes. Paid off with the arrival of peace in February 1674, she was taken into dock and girdled, with layers of extra planking added to her sides. This increased her breadth from 44ft 8in to 46ft, and her tonnage correspondingly rose from 1443 to 1530 tons.



AN engraving after a painting by Isaac Sailmaker of the *Royal Prince* of 1670, shown in the multiple-view tradition of marine portraiture – in this case a starboard broadside and port quarter perspective. The similarity between this and other oil portraits of the ship in terms of sail set and the flags flown suggests a degree of plagiarism; or at best different renditions of the same event.
[NMM A3111]

She emerged from this refit with the rolling problem apparently cured, as no further complaints are recorded. She briefly

recommissioned in the summer of 1678 under Captain John Rogers, as the flagship of Vice-Admiral Sir John Kempthorne in the Channel. The rest of her career was spent as a guardship at Portsmouth until she was partly rebuilt in the early 1690s.

As with Deane's previous First Rate, the launch of the *Royal Charles* in March 1673 was followed a few weeks later by a further instruction to Deane to build yet another, this time as a replacement for the *Royal James* lost at Solebay. She took the same name, but on this occasion Deane was able to take into account the lessons learnt from the war. To avoid the instability of the *Royal Charles*, the new *Royal James* was 4ft shorter in the keel, so that her proportions were closer to those of the First Rates of the Second Dutch War era. Partly because of this reduction in length, and partly to provide a little more space between the guns, one pair of gunports was omitted on each continuous deck, with the reduction of six heavy guns being offset by three pairs higher up, one on the quarterdeck abaft the quarter gallery and two on the forecastle. Furthermore, while she was formally established with the same ordnance as Deane's other three-deckers, in 1685 she was certainly equipped with demi-cannon instead of cannon-of-seven on the lower deck, a significant reduction in firepower.

THE tragically short-lived *Royal James* features in this posthumous (1678) oil painting by Willem Van de Velde the Elder, accompanied by a royal yacht and sundry other vessels. Commissioned in January 1672 under Captain Richard Haddock, the ship was destroyed by the Amsterdam Admiralty fireship *Vrede* which grappled her during the battle of Solebay a bare four months later. Dutch gunfire had already cost her 250 of her 800 crew dead or wounded, and many of her upper deck guns were out of action, so the ship's resistance was greatly weakened. The

conflagration took a couple of hours to sink the ship, but most of the crew were lost, including the admiral, Edward Montagu, the Earl of Sandwich.
[NMM BHC3608]

A superbly detailed contemporary model of the *Royal James* of 1671, Anthony Deane's first three-decker, she introduced a number of innovations in her construction, including the first use of iron knees and pillars. During her brief life she proved a magnificent success, being both stable and weatherly, and after her premature loss at the Battle of Solebay in 1672, Deane was quickly commissioned to build a replacement.[KRIEGSTEIN COLLECTION, USA]

The First Rates in the Anglo-Dutch Wars

The three Anglo-Dutch wars of the seventeenth century were almost entirely naval in character, fought for control of maritime trade rather than for land conquests. In a relentless series of fleet engagements, conducted on a huge scale and with unmitigated ferocity, the English First Rates were more actively employed than at any other time in the 250-year history of the type. From early 1653, the English battlefleet was organised into three squadrons, named Red (centre), Blue (van) and White (rear) – although the relative status of Blue and White was later reversed – and it became the established tradition that each squadron was commanded from a First Rate flagship. This set the minimum number required in the fleet at three, although there was usually at least one 'spare'.

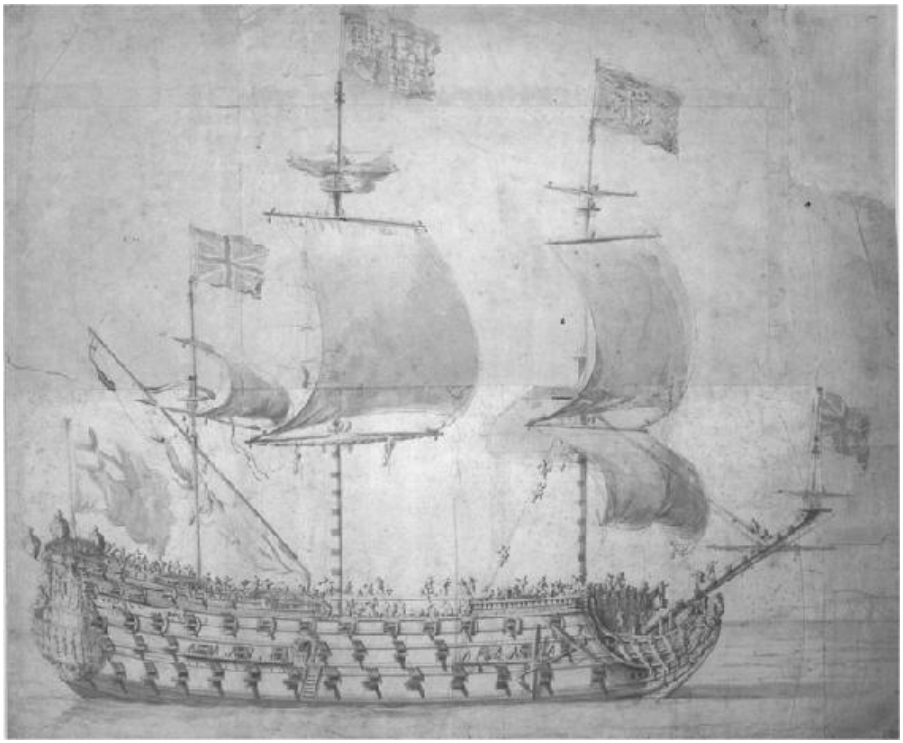
Since the Dutch had nothing comparable – they built no large three-deckers until much later in the century – the First Rate should have been an English trump card; yet the only First Rates ever lost to enemy action occurred during these wars, and all in less than glorious circumstances. On the positive side, First Rates provided an unparalleled concentration of firepower and, almost invariably acting as flagships, a centre of strength and a rallying point in action; but as such they also drew disproportionate attention from the enemy First Rates could be battle-winners, but any misfortune that struck them in action could sway the decision the other way.

ON the third day of the Four Days' Battle in 1666 the English were forced by superior numbers to stage a fighting retreat towards the Thames, and in the confusion the *Prince* and other ships went aground on the Galloper Sand in the estuary. The other ships pulled free, but the *Prince* was soon

surrounded by the chasing Dutch and the unfortunate Admiral Sir George Ayscue surrendered – the only admiral in the Royal Navy's history to do so. Admiral Tromp had hoped to take the First Rate back to the Texel as a prize, but when she was refloated, the effort disabled her rudder, and so the Dutch were forced to set her alight to prevent her recapture. She burned until nearly midnight, and then blew up as her magazines exploded. Rendered by Willem Van de Velde the Elder in 1672, this grisaille depicts the *Royal Prince*, surrounded by Dutch two-deckers, at the moment the English ensign was struck.
[KARLSRUHE MUSEUM]

BY the end of the second Anglo-Dutch war numerous disasters, including the outbreak of plague and the Great Fire of London in 1666, had reduced the king's government almost to bankruptcy. With peace negotiation under way, they gambled on the cessation of hostilities and laid up the majority of the fleet at its usual winter moorings in the Medway. However, in a brilliant *coup de main*, a Dutch force of 62 ships under de Ruyter's command staged a successful attack on the disarmed and unmanned English ships lying at anchor. A number of the Great Ships were scuttled or burned, including the *Royal James*, but the greatest prize was the fleet flagship, the *Royal Charles*, which was carried off to the Netherlands as a prize. Naturally a favourite subject for Dutch marine artists, this is Ludolf Backhuizen's oil rendering of the captured *Royal Charles* under Dutch colours. The prize passed the rest of her life as a trophy and tourist attraction at Hellvoetsluis until she was sold (for 5000 guilders) in April 1673 to be broken up. The royal coat of arms from the taffrail is preserved in the Rijksmuseum, Amsterdam.
[NMM BHC0286]

SCARCELY a year old, and only commissioned four months beforehand, *Royal James* was the flagship of Edward Montagu, Earl of Sandwich at the Battle of Solebay on 28 May 1672. Fiercely engaged in the centre of the fighting, she fought her way out of one encounter with a Dutch ship that had become entangled with her, and exchanged salvoes with other enemy warships, but she was badly damaged and barely manoeuvrable by the time she was grappled by a Dutch fireship. With nearly a third of the crew killed or incapacitated, and her captain, Richard Haddock, wounded, effective countermeasures could not be organised, and the ship burnt to the waterline and sank. The conflagration lasted for a few hours and some of the crew were taken off, including Haddock, but most of those aboard including Sandwich were killed.
[SCHEEPVAART MUSEUM, AMSTERDAM]



THIS pencil-and-wash portrait by the elder Willem Van de Velde of the new *Britannia* was made around 1685, following her construction by Sir Phineas Pett at Chatham as part of the 1667 'Thirty Ships' programme. The artist probably drew this during a visit to Chatham for the launch of the rebuilt *Royal Sovereign*. It shows the Stuart royal standard flying at the main mast head and the Admiralty flag at the fore mast. The Master Shipwright made the *Britannia* as broad as possible (16 inches wider than was specified) but the oversized guns with which she was supplied still made her unstable and she required girdling before her first commissioning in 1691, adding 16 inches of fir to her breadth, and incidentally removing two pairs of gunports from her middle deck. After modification she served very successfully as Admiral Edward Russell's flagship, fighting with distinction at Barfleur in 1692 and leading the Anglo-Dutch main fleet into the Mediterranean in 1694.
[NMM PT2557]

Deane's First Rates of the Third Dutch War – construction history

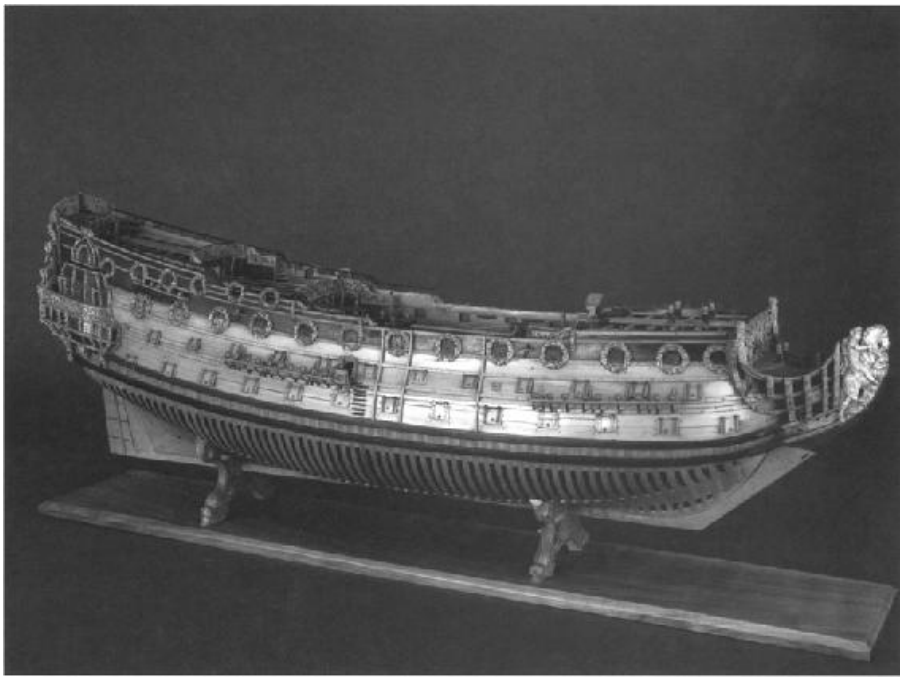
VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Royal James (i)	Anthony Deane, Portsmouth Dyd	22. 4.1669	31. 3.1671	Burnt in Battle of Solebay 28.5.1672
Royal Charles	Anthony Deane, Portsmouth Dyd	26. 4.1671	10. 3.1673	Rebuilt from 1691 to 1693 (renamed *Queen*)
Royal James (ii)	Anthony Deane, Portsmouth Dyd	1. 4.1673	29. 8.1675	Rebuilt from 1691 to 1695 (renamed *Victory*)

Note that the *Royal Charles* was renamed on 27.1.1693 and the *Royal James* (ii) on 3.3.1691 upon their rebuilding. The *Royal James* (ii) was a replacement for the first ship of 1671.

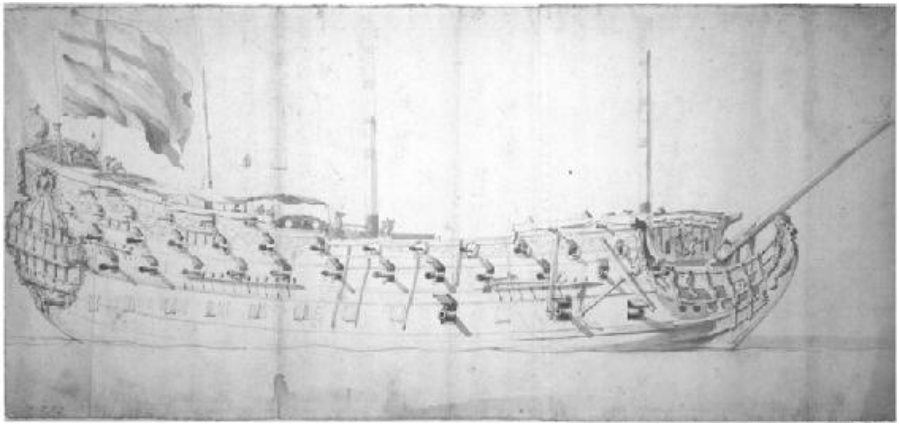
Deane's First Rates of the Third Dutch War – dimensions in feet

and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Royal James (1671)		136 0	45 0	18 5	1464 $^{83}/_{94}$
Royal Charles (1673)		136 0	44 8	18 3	1443 $^{23}/_{94}$
– following girdling			46 0		1530 $^{65}/_{94}$
Royal James (1675)	163 1	132 0	45 0	18 4	1421 $^{75}/_{94}$



THIS fine contemporary model of the *Britannia* of 1682 once belonged to Charles Sergison, Pepys's successor as Clerk of the Acts to the Navy Board, although it is now in the collection of the US Naval Academy Museum in Annapolis, Maryland. The model can be identified with more certainty than most: quite apart from its well-documented provenance, it carries a carved wooden ribbon on the break of the poop with the ship's name on it. *Britannia* herself was designed and laid down under Sir Phineas Pett, the Master Shipwright at Chatham, but was actually completed by Robert Lee, who took over from Pett in July 1681. She was laid up following her launch a year later, and had deteriorated by the time that she was examined by a Special Commission. Her refit cost £2315 for the work on the hull, and another £2138 for rigging and stores. Unusually, this ship had an entry port on each side of the middle deck. She also carried a particularly elaborate figurehead depicting the King riding on horseback over a winged dragon.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]



THIS drawing by the younger Van de Velde shows the *Royal James* of 1675, built as a replacement for the ship of the same name lost in action in 1672. Learning from the instability found in the *Royal Charles*, Deane made his third 100-gun ship slightly fuller, and four feet shorter. Moreover, the Admiralty had ruled in October 1673 that 'all ships to be built hereafter are to have one fewer port on each side' on each gundeck. As a result Deane's design was amended to have one fewer pair of gunports on each of the three continuous decks in order to allow about a foot more space for working each gun. Instead, she carried three more pairs of guns on her forecastle and quarterdeck. Nevertheless, she was probably over-gunned as a consequence (as Frank Fox has observed) and under the 1685 Gun Establishment she was to exchange her initial cannon-of-seven for smaller demi-cannon, although it is uncertain whether this change was put into practice before she was rebuilt in the 1690s, soon after serving at the Battle of Barfleur in 1692; by this date she had already been renamed *Victory*.
[NMM PT2335]

The Navy Board Model

This is a particularly fine example of the kind of ship model that was developed in England in the second half of the seventeenth century. As far as is known, they were officially commissioned works and so are generally referred to as Admiralty Navy Board or Dockyard models. The vast majority are built at $^{1}/_{48}$th scale, which equates to the ¼in to the foot scale used for the draughts from which the full size ships themselves were constructed. This type of model rapidly became a recognised convention with stylised features, notably decorative apertures left in the deck planking to allow glimpses into the interiors and hull planking omitted altogether below the main wales, exposing the frames in a pattern that recalled the lines of a draught. They were not always rigged, but usually replicated the decorative work.

At one time it was thought they were used as part of the design process, but these models must have taken as long, if not longer, to build than the real ship; there are also many surviving examples of far simpler 'block' models that demonstrate little more than hull shape, so while the latter were

undoubtedly used for design purposes, Admiralty models were more likely just impressive art objects, intended for display. Given the time, care and skill expended on their construction, as well as their official background, it is almost inconceivable that they are not intended to represent actual ships – yet it is often surprisingly difficult to identify them for certain (British warships did not carry their names on the stern until the late eighteenth century and models are no different). Real ships were often modified during construction, and in the course of what might be long careers; similarly, models can show signs of later alteration (for example, to put a new monarch's arms on the stern), not to mention subjection to ill-advised 'restoration' like any other antique. Only the most meticulous research can suggest identities, and even then it is often on the balance of probabilities.

In the case of this model, the consensus of expert opinion is that it represents the short-lived *Royal James* of 1671. Its provenance can be traced back to the ship's designer, Sir Anthony Deane, who was persuaded by Samuel Pepys to present it to Christ's Hospital school. It is among the very best of the genre and currently resides in the Kriegstein Collection, which contains some of the finest Navy Board models in private hands.

THE figureheads of First Rates were individual creations of complex design and subtle imagery, although equestrian figures like this one were common. The rider wears classical armour, but a contemporary full-bottomed wig, exactly like the oil painting of James II by Henri Gascard at the National Maritime Museum.

THE profile of a Restoration era First Rate was marked by a graceful sheer sweeping up from a long, overhanging bow to a tall stern. The profusion of gilded carved work might be dismissed as the craftsman's natural desire to produce a highly decorative *objet d'art* were it not for the many paintings and drawings that confirm the literal truth of such extravagance. A feature of this model is the acanthus leaf frieze painted along the topsides.

A close-up of the poop demonstrating one of the most noticeable features of the Navy Board model: areas of deck left unplanked to allow glimpses of the interior, which were often surprisingly detailed despite the difficulty of gaining a clear view (this characteristic has only been revealed with the advent of modern endoscope technology). An unusual feature of this model is

the presence of narrow gangways between the poop deck and the side, allowing the poop to rise above the height of the gunwale to allow more headroom in the officers' cabins below it.

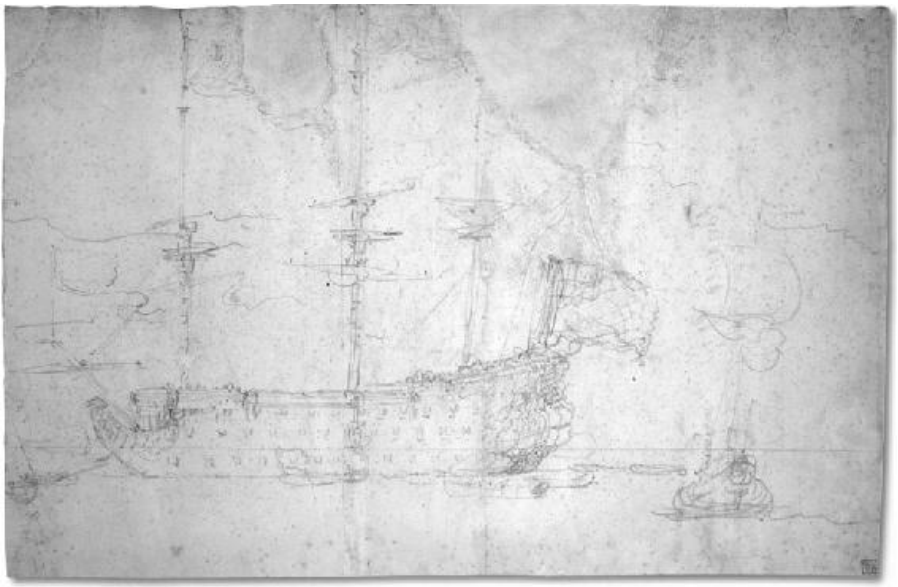
THE larger warships of the Caroline era tended to have a royal coat of arms on the taffrail. When this model was acquired by the present owners this feature was missing, but by a remarkable coincidence a boxwood carving of the right period and perfect size was later acquired at auction and this is now installed on the model.

THE quarterdeck and poop, the domain of the senior officers, was heavily decorated on the bulkheads that led to their cabins. Note the double doorway

to the coach, which gave access to a staircase descending to the middle gundeck. In stark contrast to this relative luxury, the kennel-like structures at the estreme stern were ‘cabins’ for the ship’s trumpeters.

THE decorative work was most concentrated at the stern where the senior and flag officers were accommodated. Despite its grandeur, the principal function of the quarter gallery was to house lavatory facilities for the officers. The rope ladder gave access to the ship’s boats which were usually towed when at sea.

AN impressive quarter view of the model showing the unplanked lower hull. There is some debate among experts about whether the framing was ever intended to replicate full-size practice (it certainly does not represent the later modes of construction), but the alternating pattern of equally sized solid and void is a powerful visual aid when trying to appreciate the hull form. At this period both the stern and quarter galleries were enclosed, the open galleries of earlier in the century having disappeared only to be reintroduced – under the influence of French ships – towards the end of Charles II's reign.



A rough sketch of the *Royal Sovereign* following her rebuilding between 1680 and 1685, done by one of the Van de Velde family (probably the Elder). Pett's successor at Chatham, Robert Lee, used this opportunity to bring her up to the same standard as the new-built *Britannia*. He increased the keel length by 4 feet and widened her. [NMM PY3927]

The rapid growth in the size of both the Dutch and French navies (the war between them continued notwithstanding the withdrawal of England from hostilities in 1674), put the Royal Navy in danger of being overtaken by both its rivals and relegated to the status of a lesser maritime power. Samuel Pepys, the navy's leading administrator, initiated a programme to enlarge the fleet, at first requesting from Parliament a programme of forty ships in April 1675, including two First Rates together with seven Second Rates, twenty-seven Third Rates and four Fourth Rates. This was cut back and later modified, so that the final programme approved on 5 March 1677 included a single new First Rate among the 'Thirty Ships' of this Programme. However, Pepys also secured permission to rebuild the *Royal Sovereign* at the same time, and used this rebuilding to bring her up to the same specification as the single authorised new First Rate – in effect, the *Royal Sovereign* became a sister-ship to the 1677 Programme vessel, which was named *Britannia*.

The design of the new First Rate was entrusted to Sir Phineas Pett at Chatham; as Master Shipwright there, he also supervised the work on both ships until the end of 1680, when the post was taken over by Robert Lee. Pett was concerned that the initially specified breadth of 46ft would be too restrictive and would lead to instability – several of the previous three-deckers had required girdling (widening by adding

extra layers of planking to the sides of a ship) when they were found to be unstable. The new *Britannia* was widened by some 16 inches from her specification, and the *Royal Sovereign* a clear 24 inches. In the case of the former vessel even this breadth proved insufficient for the weight of the latest bronze cannon-of-seven supplied by the Ordnance Board, which were also carried at an increased height (Pepys had increased the freeboard of the lowest gunports). The end result was that a potentially fine sailing vessel was described as a 'slug'.

The faults did not really become apparent until the 1690s, as the *Britannia* was not put into commission for eight years after her launch. Much to the alarm of the Admiralty of the time, which needed every capital ship it could put into service following the outbreak of war against the French, the *Britannia* was diagnosed as so unstable in her original condition that she had to be taken in hand and girdled – a procedure which meant that she missed participating in the early actions of the war. An extra 16 inches of fir planking was added, but she emerged from this process with vastly improved sailing performance, in time to play a key role in the Battle of Barfleur, where as the flagship of Admiral Sir Edward Russell she fought it out toe-to-toe (more precisely, broadside-to-broadside) against the French 106-gun *Soleil Royal*. She continued to serve as a flagship and went with the main fleet to the Mediterranean in 1694, but there were no further fleet actions in this war. Following a major refit in 1700–1701, she was only briefly brought back into service in the following war to serve as the flagship of Admiral Sir Clowdisley Shovell in the attack on Barcelona in 1705. By 1714 her overweight guns had strained the hull to a point where no further service was practical, and she was taken to pieces in 1715 to be rebuilt.

The *Britannia* was originally established with 26 cannon-of-seven (42-pounders), 28 culverins and 28 'heavy' sakers. As her Van de Velde portrait shows, she had fourteen ports on the lower and middle decks, and only thirteen on the upper deck, so it would seem this armament included a pair of long-barrelled culverins and a pair of long-barrelled sakers, which were placed in the chase ports a deck below their standard-length equivalents. The armament was completed by 16 'light' sakers and two 3-pounders, for which there were provided on each side six quarterdeck and three poop deck gunports.

While the rebuilding *of Royal Sovereign* was not part of the Thirty Ships Programme, her dimensions were governed by the Establishment of 1677. She was lengthened by some 4ft along the keel, and her original equestrian figurehead was replaced by that of a lion. Note that three distinct methods of calculating the keel length

(and hence the burthen) were used during this period. That shown is the actual keel length (or 'touch' length), which produces a figure comparable with the establishment. The 'Calculated' length was usually about 5 ft longer, while the 'tread' length, used by certain authorities including Pepys and Laird Clowes, produces an even more inflated tonnage that is useless for comparative purposes.

Like the *Britannia*, the *Royal Sovereign* played a key role during King William's War. As the flagship of the Red (Centre) Squadron under Admiral Lord Torrington, she fought in the Anglo-Dutch fleet against de Tourville's French fleet off Beachy Head in June 1690, sadly not with any success. At Barfleur two years later, she carried the flag of Vice-Admiral Sir Ralph Delavall, this time achieving a resounding victory over de Tourville's fleet. She subsequently served as a flagship for Vice-Admiral Matthew Aylmer in 1693–94, but early on 27 January 1696, while moored in the Medway, a fire was started by a lighted candle which rapidly took control and gutted the ship. The watchkeeping seaman who left the burning candle was flogged and imprisoned for life, while the warrant officers who were required to be supervising the ship were found to be all asleep ashore. Parts of the ship's timbers were salvaged and used in the construction of the replacement *Royal Sovereign* ordered twenty-one months later.

First Rates of the Thirty Ships Programme* of 1677 – construction history

VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Britannia	Phineas Pett II, Chatham Dyd	5. 3.1677	28. 6.1682	Rebuilt from 1715 to 1719
Royal Sovereign	Robert Lee, Chatham Dyd	10.1680	1685	Burnt by accident 27.1.1696 at Chatham

* while not part of the Thirty Ships Programme, the reconstruction of *Royal Sovereign* was nearly contemporary with it.

First Rates of the Thirty Ships Programme of 1677 – dimensions in feet and inches

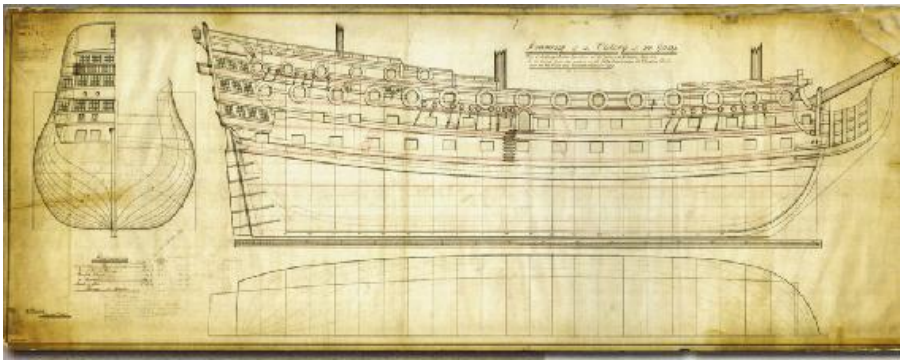
VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
First Rate establishment – as completed	165 0	137 8	46 0	19 2	1549 43/94
Britannia	167 5	136 0	47 4	19 2½	1620 79/94
Royal Sovereign (RD)	167 9	135 6	48 0	19 4	1660 55/94

CHAPTER

3

The Later Stuarts

In E B Cockett's book on the painter Peter Monamy, this oil seascape is identified as the arrival, of the Queen of Portugal at Spithead in September 1708, making the centre ship Vice-Admiral Sir George Byng's flagship, the *Royal Anne;* however, there are discrepancies with the surrounding vessels that cast doubt on the identification. In any event the *Royal Anne* of 1704, rebuilt from the former *Saint Andrew* of 1670, did not enjoy a long or active career. She was commissioned in 1705, and served for five years before being paid off m 1710 and laid up at Chatham, where she remained until taken to pieces in 1727. She was ordered to be rebuilt in that year, but no work actually took place for almost twenty years while the ship remained nominally in existence, although no more than a pile of timber in the corner of the dockyard. Finally work started in 1747 to rebuild the *Royal Antic*, although she underwent another name change in 1756 before being completed.
[NMM BHC1005]



THIS draught purports to depict the *Victory* of 1695 following her rebuilding from the remains of the former *Royal James*. However, it is a nineteenth-century product of unknown provenance, signed and dated 'W S Mumford, July 24th 1847'. It may be based on a lost original and is generally convincing in its proportions and details, like the round port wreaths, although it is unlikely that the channels were fitted above the middle deck ports at this time, so there must be a question mark over its authenticity. Internally, the draught shows a number of curved staircases of the kind familiar from late seventeenth-century models.
[NMM J1792]

AS completed by Master Shipwright William Lee at Woolwich, the *Royal Anne* was slightly enlarged in order to carry the same number of guns as the more recent First Rates. However, she and her near-sister *London* still carried two fewer demi-cannon on the lower deck than did the larger ships, and instead carried two extra 6-pounders on the poop or roundhouse deck. She was actually three feet longer and six inches broader than her planned dimensions. Unlike the other First Rates of this date, the *Royal Anne*'s ordnance comprised all brass guns. This Thomas Baston engraving is one of a series of carefully executed portraits of British warships published in 1721.
[NMM V1657]

By the end of the 1680s most of the surviving First Rates were ageing, only the *Britannia* and *Royal Sovereign* being fit for frontline service. Among the smaller ships, the *Saint Michael*, briefly ranked with the Firsts, was returned to the Second Rate in December 1689, and the *Charles* of 1668 – after being renamed *Saint George* in October 1687 – was similarly reduced in 1691-With the outbreak of war against France, a programme to modernise three of the surviving ships from the 1660s and early 1670s was put in hand.

The Second Rate *Victory* of 1666 was at first ordered to be rebuilt on 10 November 1690, but when her hull was inspected at Woolwich in early 1691, she was found to be too decayed to warrant the necessary expenditure, and she was broken up. In her place, it was decided to rebuild the First Rate *Royal James* of 1675-Following the Glorious Revolution of 1688 and the accession of William and Mary as joint monarchs, the ship's name was no longer acceptable, so on 3 March 1691 she was given the name *Victory;* the work was put in hand in February 1692 at Chatham.

Meanwhile two other First Rates had also commenced reconstruction. In March 1691 the *Royal Charles* of 1673 and the *Royal Prince* of 1670 were ordered to be repaired, although in both cases the amount of work involved virtual rebuilding. Clearly the former's name was also inappropriate, so at her re-launch (or undocking) at Woolwich in January 1693 she was given the name *Queen* in honour of the reigning Mary. Just before her re-launch (or undocking) at Chatham in April 1692, the *Royal Prince* had already received the new name *Royal William* in honour of Mary's co-ruler.

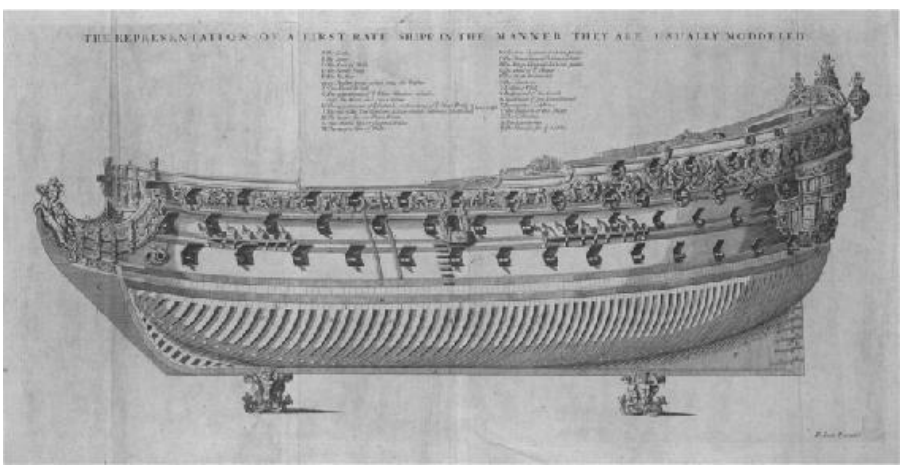
Both the *Victory* and *Queen* each retained a lower deck battery of 26 cannon-of-seven, with 28 ports for culverins on the middle deck and an equal number for demi-culverins on the upper deck, plus 18 sakers on the quarter-, forecastle and poop (roundhouse) decks. The *Royal William* had a fourteenth pair of cannon-of-seven on the lower deck, and instead omitted the two guns from the roundhouse.

All the other First Rates participated in the fleet actions of the early 1690s. While no three-deckers were present in Admiral Herbert's fleet in the Battle of Bantry Bay in 1689, the *Royal Sovereign* was Lord Torrington's flagship at the action off Beachy Head in mid-1690. The *Britannia* was Admiral Edward Russell's flagship at the Battle of Barfleur in May 1692, while his Vice-Admiral, Sir Ralph Delavall, commanded the Rear division from the *Royal Sovereign*, and the 96-gun *London* and *Saint Andrew* also took part in the Rear Division. The newly-rebuilt *Royal William* emerged from fitting out just in time to lead the Van division of the English fleet, flying the flag of Rear-Admiral Sir Clowdisley Shovell.

The most prestigious ship in the fleet, the old *Royal Sovereign* –

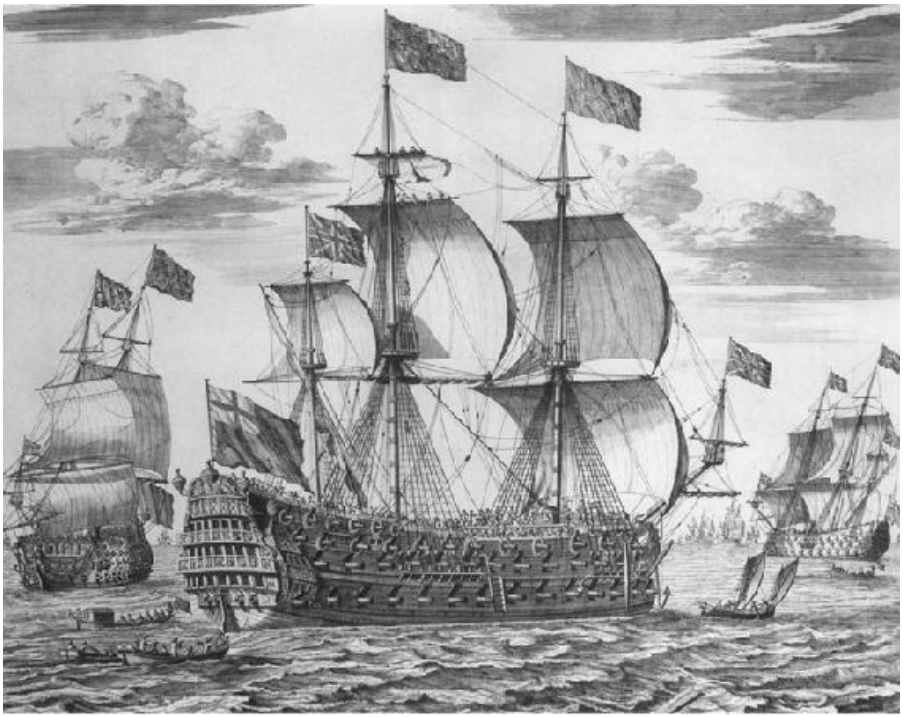
originally built in 1637, and rebuilt in 1660 and 1685 – was largely destroyed in an accidental fire at Chatham in January 1696. Although nominally a 'rebuilding', her replacement was therefore effectively an entirely new ship, and the talented shipwright Fisher Harding was transferred deliberately to Woolwich and given virtually a free hand in creating what was to be a highly successful replacement. The proposed dimensions under Harding's draught were: gundeck length 173ft keel, 49½ft breadth and 19ft depth in hold.

The new *Royal Sovereign* was commissioned in January 1702 and by First Rate standards the ship was to see a lot of service following the renewal of war later that year. Under her first captain, Thomas Ley, she served as the flagship of Admiral Sir George Rooke's Anglo-Dutch fleet, which sailed from the Channel in July for an assault on Cadiz. The attack was not successful, and Captain Ley died on 19 September at Cadiz, the day when the fleet sailed for home. John Fletcher, the second captain took command temporarily, and the ship still flew the flag of Admiral Sir George Rooke at the Battle of Vigo Bay on 12 October 1702; in 1703 Captain James Wishart replaced Ley, while Rooke transferred his flag to the 80-gun *Somerset*. The *Royal Sovereign* paid off in October 1703.



THE ships of the 1690s are poorly represented visually. Without royal patronage, the Van de Veldes were less active – the Elder died in 1693 and although his son survived until 1707, there are few identifiable ship portraits from this era. Surviving official draughts from before 1700 are also very rare, so although this engraving is not a named ship, it is important evidence for the probable appearance of First Rates like *Royal William* or *Queen*. It is the work of Bernard Lens, one of a father, son and grandson dynasty, all of whom unfortunately bore the same name, but probably attributable to the second (1659–1725), who was active during the reign of William III. It is described as a 'First Rate ship in the manner they are usually modelled', and clearly represents a Navy Board model rather than a full-size ship. The figurehead of a winged cherub riding a lion does not suggest any particular First Rate, and is actually more likely on a Second.

[NMM PA15059]



THIS somewhat crude engraving by Jan Kip is after a portrait of the *Victory* by Isaac Sailmaker, and shows the ship from three angles. It is firmly identified in the caption as 'The *Victory* a First Rate ship … built by Mr Lee of Chatham' but the figurehead is a simple crowned lion, unlike the more elaborate creations normally carried by First Rates. The ship flies William Ill's royal standard and there is a WR monogram on the stern of one of the boats.
[NMM PA16675]

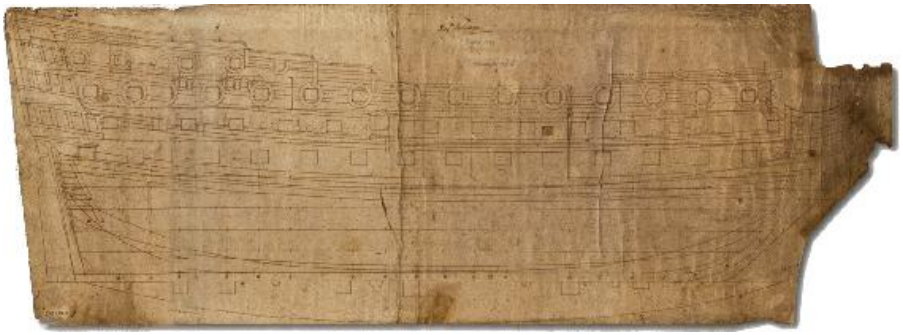
The First Rates Rebuildings of 1690–92 – construction history

VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Victory	Robert Lee, Chatham Dyd	10.11.1690	1695	Renamed *Royal George* from 1714 to 1715; burnt 1721 and BU
Royal William	Robert Lee, Chatham Dyd	18. 4.1691	21. 4.1692	BU 1714 and rebuilt to 1719
Queen	Joseph Lawrence, Woolwich Dyd	16. 3.1691	1.1693	BU 1709 and rebuilt to 1716

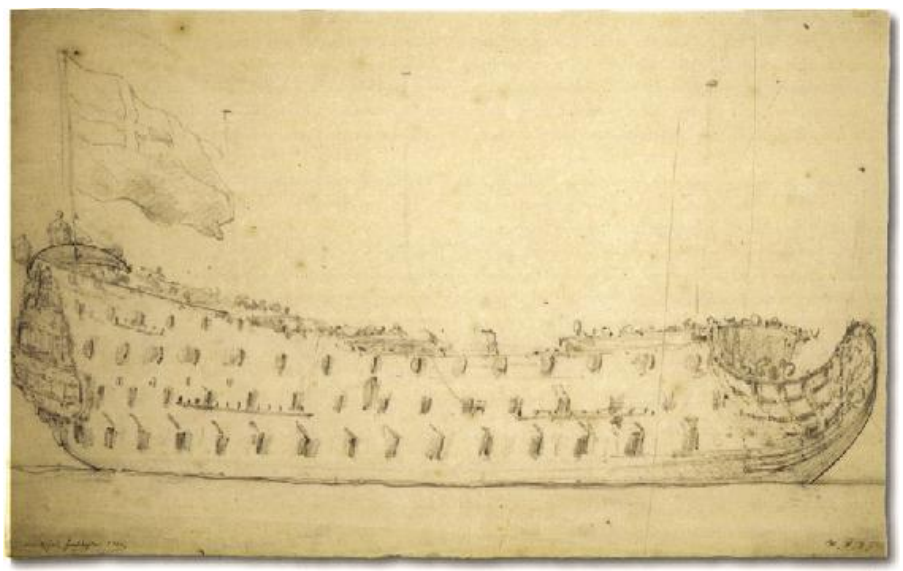
The First Rates Rebuildings of 1690–92 – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Establishment:	158 0	126 11	44 0	18 2	1307
— as completed:					
Victory	163 1	136 0	45 4	18 6	1486
Royal William	167 3	132 6	47 2	18 0	1588
Queen	170 6	137 8	47 7	18 0	1658

THE *Royal Sovereign*, flying the royal standard from the main truck, is accompanied by a royal yacht as she gets under way in a light breeze in this 1703 portrayal by the younger Van de Velde. The decorative work of the stern is depicted in minute detail, right down to the unicorn on the royal arms, painted white and standing out from the surrounding gilding.
[NMM BHC3614]



THIS very early, and rather battered, draught is identified in a contemporary hand as the *Royal Sovereign*, but there is no further detail, date nor dimensions listed. By measurement, the sheer plan agrees with the proposed length for the ship eventually launched in 1701, and the unfinished look to various aspects of the draught suggests that it may have been an early working version of Harding's proposed design.
[NMM J1898]

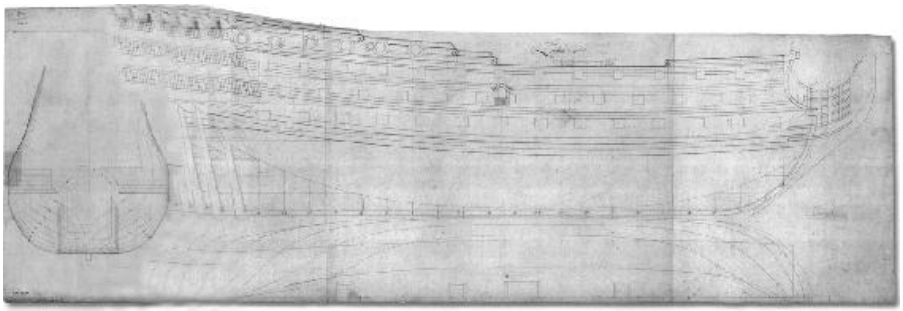


A drawing by the younger Van de Velde of the *Royal Sovereign*, probably at her launch in 1701. The 'rebuilding' of this ship at Woolwich between 1697 and 1701 was a legal fiction. In fact the older ship, dating in parts back to 1637, had been largely destroyed in an accidental fire at Chatham in January 1696, so the vessel that emerged was in effect a completely new ship. Master Shipwright Fisher Harding, generally perceived to be the most talented of the ship designers around the end of the century, was specifically moved to Woolwich and given virtually a free hand to design the ship. She proved such an outstanding success that, when in 1719 the new Hanoverian administration cast around for a suitable model for their new Establishment dimensions for First Rates, they unhesitatingly adopted the as-built dimensions of the *Royal Sovereign* as their standard for future construction.
[NMM PY1910]

Recommissioned in February 1705 under Captain John Hartnell, as flagship of Vice-Admiral Sir Stafford Fairbourne, the *Royal Sovereign* subsequently served with Shovell's fleet in the Mediterranean, and was again paid off in October 1706. After a short commission in 1708, she was again fitted as a flagship (by Admiralty Order of 26 February 1709) for Admiral Sir John Leake, with Captain Stephen Martin as flag captain from January 1709 until paid off on 16 May 1709. Briefly laid up at Chatham, she was again fitted out by Admiralty Order of 1 January 1710 and flew the flag of Admiral Sir Matthew Aylmer until paid off into Ordinary in October 1710. She was not subsequently put back into service until after the 'Great Repair' of 1723–29.

In March 1702, two days prior to the death of William of Orange, the *Saint Andrew* and the *London* were ordered to be rebuilt. Both had originally been built by Christopher Pett from 1667 to 1670, and the *London* had already undergone a significant repair or rebuilding by Phineas Pett at Chatham in 1679, although this had not been extensive enough to change her dimensions. Neither of Christopher Pett's ships were structurally suitable to be enlarged to the dimensions of the *Royal Sovereign*, but both were now specified as needing to be of 167ft length (137½ft on the keel), with a breadth of 47½ft and a depth in hold of 19ft for a tonnage of 1650, in order to carry virtually the same Establishment of Guns as the larger First Rates. In fact, they still had only thirteen pairs of lower deck gunports (excluding the hawse ports) and were actually established with a complement of 750 men, and carrying one fewer pair of demi-cannon on the lower deck, so that an extra pair of 6-pounders were allotted to the poop in order to make up the full 100 guns. This was the same arrangement as for the *Queen* and *Victory*.

The *Saint Andrew* was rebuilt at Woolwich by William Lee; while her rebuilding was taking place she was renamed *Royal Anne* (by Admiralty Order of 8 July 1703) in honour of the new queen and she was eventually launched in April 1704. She was commissioned in July 1705 under Captain Richard Hughes, as the flagship of Rear-Admiral Sir John Jennings, and accompanied Vice-Admiral Sir George Byng's squadron in the defence of the Channel against French privateers. In the following January, Sir George himself hoisted his flag aboard and, with William Passenger under him as the ship's captain, sailed in March with a fourteen-ship squadron to escort a large convoy to Lisbon. After spending the following year in the Mediterranean, Byng's flagship returned home, narrowly escaping the fate of her consort, the Second Rate *Association*, when the latter was lost with Admiral Sir Clowdisley Shovell aboard off the Isles of Scilly in October 1707.



DRAUGHT of the *London*. The increased firepower of this 100-gun ship – as rebuilt between 1702 and 1706 from its 1670 predecessor of 96 guns – is actually found simply by an increased number of smaller guns (6-pounders) along the quarterdeck and forecastle. Note, however, the chase port inside the cathead supporter at middle deck level. She saw no service in this reincarnation. She was commissioned briefly under Captain William Clevland in December 1706, but paid off a year later and remained at Chatham until she underwent a further reconstruction in 1718. [NMM J1831]

James Moneypenny replaced Passenger as captain in 1708, and the *Royal Anne* hoisted the flag of the now Vice-Admiral Jennings. The ship was paid off at Chatham in August 1710, remaining laid up there until March 1727, when a further rebuilding was ordered. The *Royal Anne* was taken to pieces in May, but nearly thirty years were to pass before the rebuilding was completed.

The *London*'s rebuilding at Chatham was begun by Robert Shortiss, and completed by Benjamin Rosewall, who succeeded as Master Shipwright there following Shortiss's death in 1705. She was not to experience any active career. The ship was briefly commissioned on 12 December 1706 under Captain William Clevland, but paid off on 23 June 1707 and was never recommissioned. She was docked at Chatham on 3 July 1718 for a Large Repair which apparently turned into another rebuilding.

As the War of Spanish Succession approached its end, the need for rebuilding some of the oldest ships of the line was apparent. While the 1706 Establishment provided a specification to which the 90-gun and lesser ships could be rebuilt, there was no equivalent for First Rates, which had always been accorded individual consideration. The first of these to be taken in hand was the *Queen* of 1693, which prior to launch was to be renamed after the new Hanoverian monarch. Emerging about 100 tons smaller than the *Royal Sovereign* of 1701, the *Royal George* was armed with only 32-pounders on her lower deck; eventually she was to be reduced to a 90-gun Second Rate in 1745, with two guns being removed from each deck, and her complement cut to 750; she exchanged names with the new *Royal Anne* in early 1756.

The even older *Royal William* and *Britannia*, of 1692 and 1682 respectively, were reconstructed by Russell's Board of 1714 to a larger design (with 42-pounders) based on the successful *Royal Sovereign*; this was eventually to form the basis of the 1719 Establishment of Dimensions. The new *Royal William* was laid up from the time of her launch until 1756, when she was reduced to a 84-gun Second Rate with all the guns from her upperworks removed so that she carried just her three main batteries of twenty-eight guns each: 32-pounders on the lower deck, 18-pounders on the middle, and 9-pounders on the upper, plus a complement of 750. The 32-pounders were replaced by 24-pounders by 1782 and two extra 9-pounders were added on the forecastle.

The Three-deckers of 1701–1706 (all rebuildings) – construction history

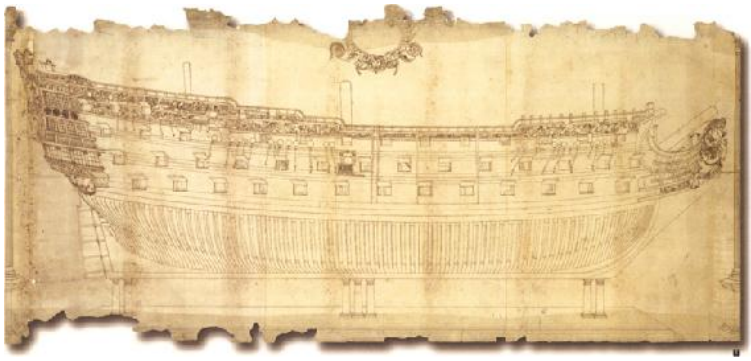
VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Royal Sovereign	Fisher Harding, Woolwich Dyd	29.10.1697	25. 7.1701	BU 2.1724 to rebuild 1724 to 1728
Royal Anne	William Lee, Woolwich Dyd	6. 3.1703	25. 4.1704	BU 5.1727
London	Robert Shortiss, Chatham Dyd	6. 3.1703	2. 7.1706	'Great Repair' 1718–1721; BU 10.1747

The Three-deckers of 1701–1706 (all rebuildings) – dimensions in feet and inches

VESSEL	GUN DECK	KEEL	BREADTH	DEPTH	TONS
Design	174 6	141 7	50 0	20 0	1882 $^{7}/_{94}$
– as completed:					
Royal Sovereign	174 6	141 7	50 $3^{1}/_{2}$	20 1	1904 $^{7}/_{94}$
1702 Specification	167 0	137 6	47 6	19 0	1650
– as completed					
Royal Anne	170 0	140 6	48 0	19 4	1721 $^{83}/_{94}$
London	168 0	137 6	48 0	19 2	1685 $^{19}/_{94}$

The Royal William of 1719

One of the longest-lived wooden warships of all time, the *Royal William* is also one of the best documented. Official draughts survive for both the ship as built and as reduced to a Second Rate; there are no less than four contemporary models in various scales showing the ship as a First Rate, as well as a painting of a model, and a draught that looks like it was prepared specially in order to build a model. It is perhaps ironic that despite her longevity, there was little glory attached to her career, so the affection for 'the old Billy' expressed by Nelson-era sailors was largely respect for age rather than fighting record. The ship's unusually long life was attributed by many to careful construction with winter-felled timber (which was believed less vulnerable to rot), but others detected the influence of George III for whom the ship was something of a favourite.



THERE is a curious eighteenth-century genre of paintings, not of actual ships, but of models. This is the earliest known example, of the *Royal William* and dated 1729 in the cartouche description. The artist is unknown but it is painted on paper laid down on wood, and currently belongs to the Kriegstein family. It is an interesting speculation whether it represents one of the many known models of the ship or whether the painting is an independent creation, perhaps based on the same kind of source material used in the construction of models themselves.
[KRIEGSTEIN COLLECTION, USA]

THIS highly unusual draught seems to represent a Navy Board model, complete to the conventional unplanked framing. It may have been an early example of the 'modelmaker's plan', but it would be equally useful as a preparatory drawing for a painting.
[NMM J1790]

THIS 1/96th scale model is one of three at Greenwich, the others being another at 1/96th scale but fully rigged, and a larger full-hull model at $^{1}/_{48}$th. Although it lacks the painted frieze along the topsides, it shows the ship in much the same condition as the Kriegstein painting, which is dated to 1729. [NMM F5803]

THE most spectacular model of the *Royal William* is currently in the collection of the US Naval Academy Museum in Annapolis, Maryland. When

the model belonged to Henry Huddleston Rogers in the 1920s, the masts and rigging were added by Henry B Culver, who also undertook a programme of restoration work, but all based on the best information available. Opinions, however, may vary on the wisdom of using ivory for the blocks and other small fittings, which focuses attention beyond their importance.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]

THE decoration of this model extends to the ceilings of the stern galleries.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]

A close-up of the head and the roundhouses on the beakhead bulkhead which housed lavatory facilities for the junior officers.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]

THE detail of the stern is both elaborate and exquisitely wrought. Note the

lights to the topgallant roundhouse almost lost among the carved extravagance of the taffrail.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]

CENTRAL gangway, gallows and mainmast details amidships.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]

A close-up of the exquisite decorative work on the quarter of the Annapolis model. Note how the trumpeters' doghouses seen earlier on the *Royal James* model have grown into a full-blown deck known as a topgallant roundhouse.
[US NAVAL ACADEMY MUSEUM, ANNAPOLIS]

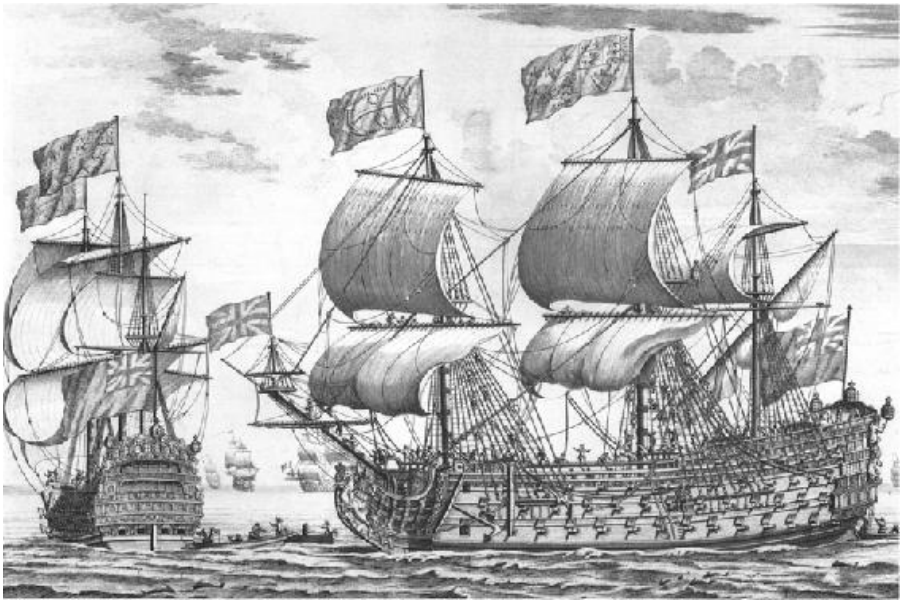
The First Rates of 1712–1719 (rebuildings) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Royal George[1]	Jacob Acworth, Woolwich Dyd	29. 8.1712	3. 5.1709	30. 9.1715	Reduced 1745 to 90-gun Second Rate. BU 1767.
Royal William[2]	John Naish, Portsmouth Dyd	1. 1.1714	31. 7.1714	3. 9.1719	Reduced 1756 to 84-gun Second Rate. BU 8.1813.
Britannia	John Hayward, Woolwich Dyd	5. 6.1716		3.10.1719	Hospital hulk 1745. BU 16.1.1749.

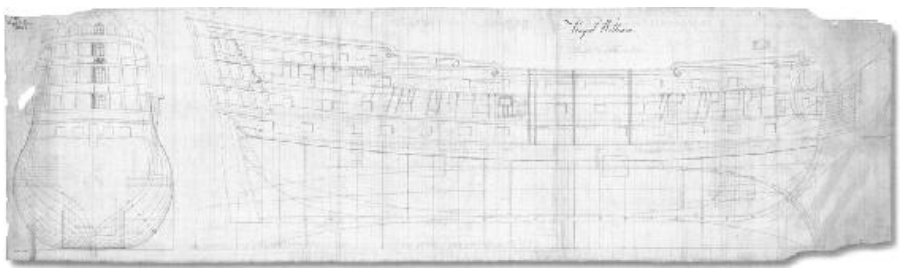
[1] rebuilt from *Queen* of 1693; renamed *Royal Anne* 15.1.1756. [2] laid up from launch until 1756, when she was reduced to a 84-gun Second Rate.

The First Rates of 1712–1719 (rebuildings) – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Royal George	171 9	139 7	49 3	19 6	1800 $^{8}5/_{94}$
Royal William	175 4	142 7	50 $3^{1}/_{2}$	20 1	1918 $^{2}5/_{94}$
Britannia	174 0	141 $6^{1}/_{2}$	50 2	19 10	1894 $^{7}5/_{94}$

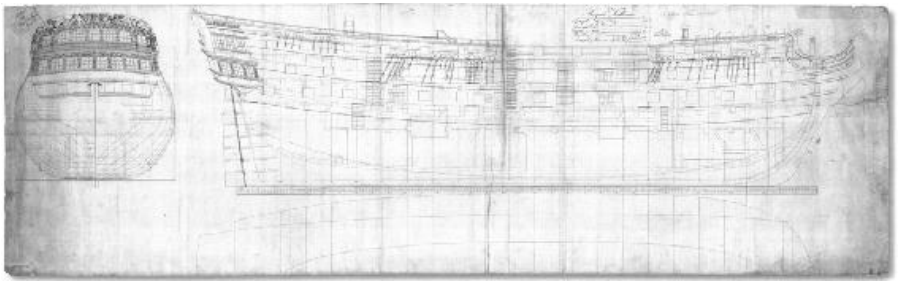


A careful rendition by Baston of the *Royal George* from two angles, flying the Hanoverian royal standard from the main truck. An interesting feature of the rigging is the combination of the old-fashioned sprit topmast at the end of the bowsprit with a jibboom that would eventually supersede it when triangular jibs replaced the square sprit topsail. The ship has a double equestrian figurehead with a rider (presumably intended to represent the king) in the garb of a classical general. Although mounted figures were a common enough theme on the bow of First Rates, this one may have been inspired by the Hanoverian emblem, a white horse.
[NMM PAG2195]

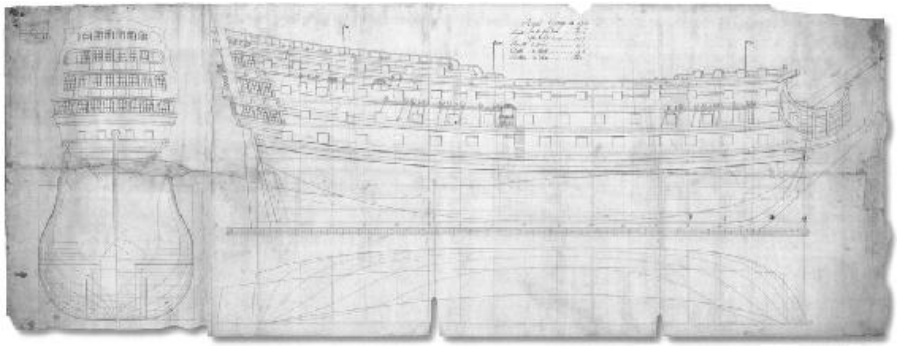


THIS may be a working draught as it is drawn on the back of a piece of pre-printed dockyard stationery, but it represents the *Royal William* as she appeared following her rebuilding by Master Shipwright John Naish at Portsmouth between 1714 and 1719, at a cost of £30,794. After being relaunched, she was not to be brought into service again as a First Rate, but was laid up at Portsmouth until 1756. Consideration was given in 1746 to a complete razee, to reduce her to two-and-a-

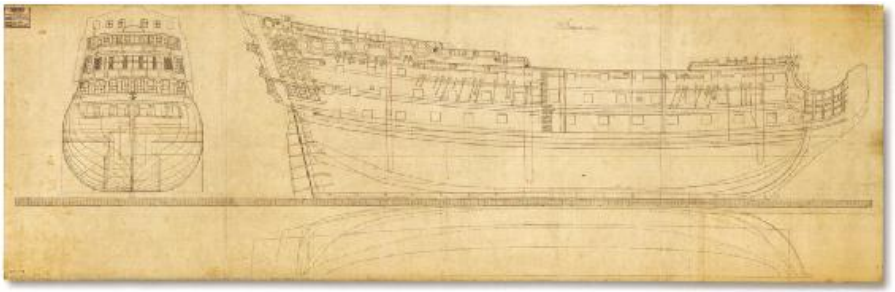
half decks, but this plan was turned down in 1748.
[NMM J1787]



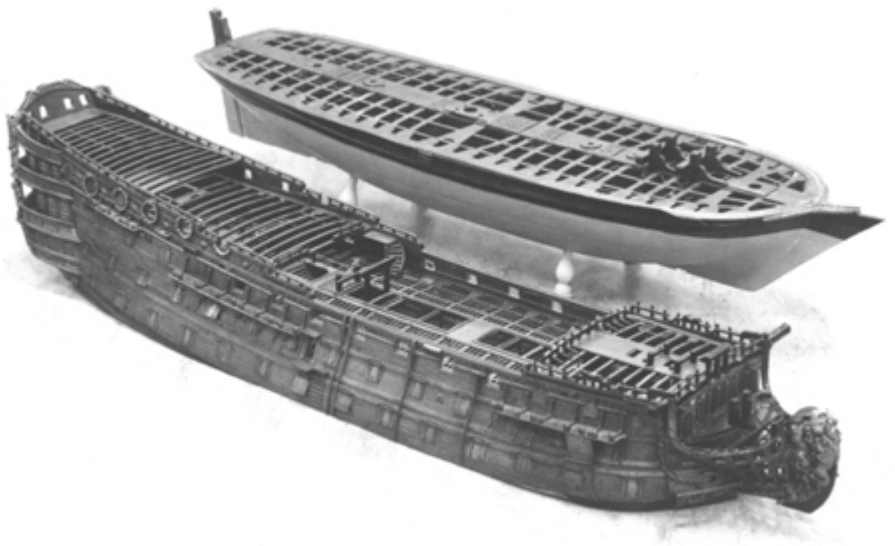
THE *Royal William* as cut down fore and aft in 1756–57 to a Second Rate. By this date draughts generally carried far more detail, and the combined sheer and profile (with the internal works shown in red) was a common convention; unusually, this shows the stern decorative work in considerable detail. Although remaining a three-decker, the removal of her quarterdeck and forecastle meant the deletion of the six-pounders formerly located there, leaving her with just the three batteries of 28 guns each – 32-pounders on the lower deck, 18-pounders on the middle deck, and 9-pounders on the upper deck. In this form, she soldiered on through the Seven Years War and through the War of American Independence. By 1790 she functioned as a receiving ship, but still filled an additional role as the flagship of the Port Admiral at Portsmouth. She was finally broken up at Portsmouth in 1813, able to trace her origins back to the *Prince* of 1670.
[NMM J1786]



BY 1706 the *Queen* of 1692, in turn rebuilt from Deane's *Royal Charles* of 1673, was in need of further rebuilding and was taken in hand at Woolwich by Jacob Acworth. While the ship was still building Queen Anne died and a shift in political power brought the Hanoverian dynasty to the throne. The *Queen* was diplomatically renamed *Royal George* to honour the new king just three weeks prior to being re-launched. This draught is annotated 'Royal George in 1715' and is laid out in the form that was to become standard for the rest of the century. Note the four levels of stern windows, although there were only two galleries. Although costing £28,707 to rebuild, the *Royal George* was left in reserve until 1741, when she was recommissioned as a flagship for Sir John Norris, still classed as a First Rate although her actual armament was reduced to 90 guns.
[NMM J1799]



THE old *Britannia* of 1682 was taken to pieces in 1715 and rebuilt at Woolwich between 1716 and 1719 by Master Shipwright John Hayward. Unlike the *Royal William* launched in the same year, the *Britannia* as rebuilt retained the traditional circular port wreaths on the quarterdeck gunports.
[NMM J1946]



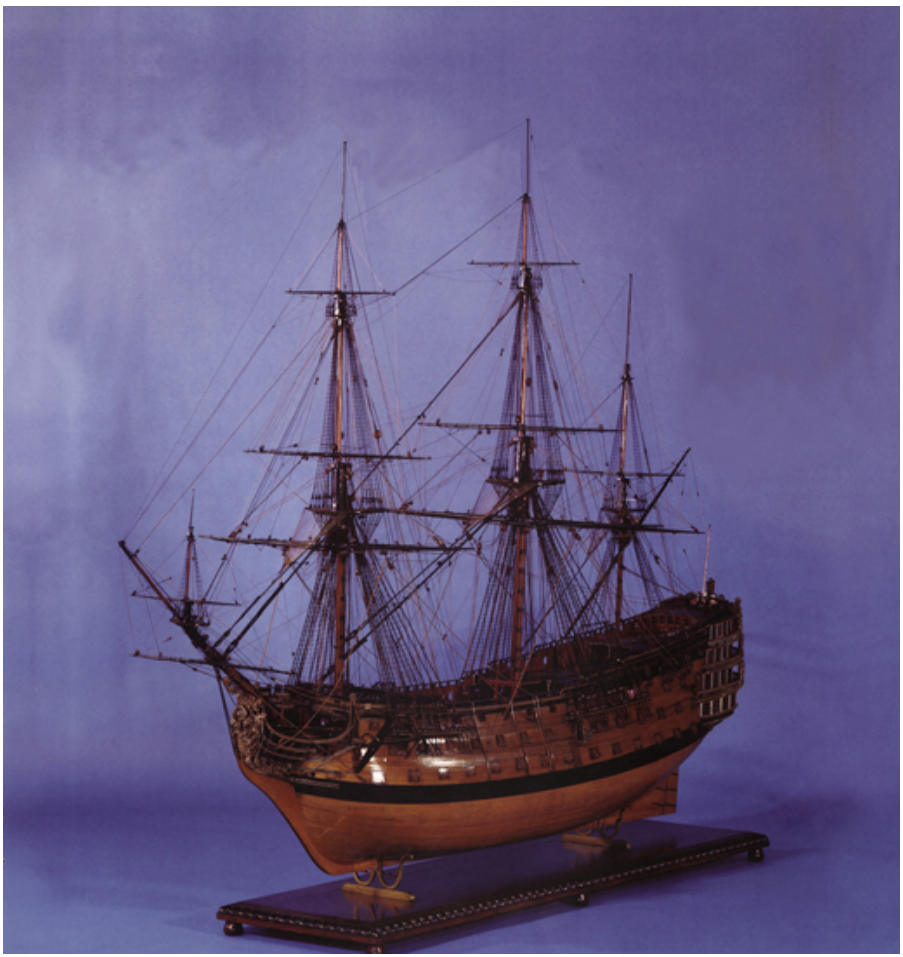
A very detailed official model of the *Britannia* (1719) which splits at the waterline to reveal the internal structure. Presumably for reasons of strength, the model's lower hull does not show the usual Navy Board open framing, but is carved from the solid. The model accords very closely with the draught.
[NMM 6300]

SAMUEL Scott's portrait of the *Britannia* shortening sail is dated 1736, and reflects the ship at the only active phase of her life. She was not brought into service following her completion in 1719, but languished in Ordinary in the years of peace until September 1733, when she began a seven-month refit to turn her into a flagship. Commissioned in 1734 under Captain Tancred Robinson, she sailed to Portugal as the flagship of Admiral Sir John Norris. In March 1736 Captain Thomas Whitney took over as commander when Robinson became a Rear-Admiral. The *Britannia* was to see no further active service upon her return home from the Tagus, although she was briefly recommissioned as a hospital ship at Chatham between 1745 and 1748. At the end of 1749 she was ordered to be taken to pieces.
[NMM BHC1039]

CHAPTER

4

The Era of the Establishments



THIS rigged model of the *Victory* of 1737 is constructed to the unusually large scale of 7/20in to the foot (1/34.3), and is said to have been built to aid the enquiry into the loss of the ship in 1744. This is unlikely, given the length of time it would probably have taken to make the model, but it certainly represents the ship as

actually built. The hull, mast and rigging is contemporary with the ship herself, but some of the running rigging was replaced m the 1930s. Note that the bowsprit carries both a spritsail topmast and a jibboom; this combination was retained in the rigging establishments until 1745, but the spritsail topmast was rarely fitted in service.
[NMM D3816]

The death of Queen Anne in August 1714 came at a time when the navy was recovering from a quarter-century of almost uninterrupted war with France. It was now to experience a quarter-century of relatively uninterrupted, if occasionally disturbed, peace. Sadly, without the impetus of war, the administration settled into a comfortable routine which saw little need for radical change, and which in the longer term left the navy unprepared for the realities of the imperial role that it had acquired by the outbreak of the next major war in 1739.

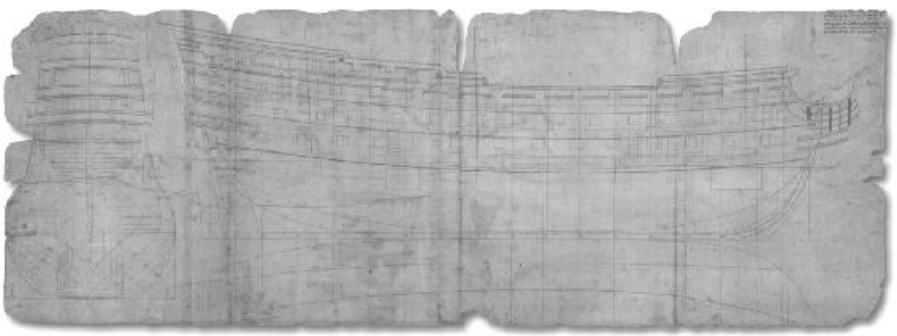
The Hanoverian succession to the throne led to the fall of the Tory Ministry, with its suspect Jacobite links. Although less drastic than the Revolutions of 1660 and 1688, the change of dynasty amounted to a putsch, with a predominantly Whig Ministry being appointed by George I. The general election of early 1715 gave the Whigs a parliamentary majority estimated at 150, and the failed Jacobite rising that year served only to consolidate the new regime. Within a year, Walpole had become First Commissioner of the Treasury, beginning under him the process that was to see the creation of the premiership.

While many of the senior personnel responsible for the navy were rapidly retired (Josiah Burchett, the Secretary, remained in post), their successors, brought up in the era of the later Stuarts, were neither particularly innovative nor forward-thinking. The new Surveyor, Jacob Acworth, was to frequently oppose efforts to improve ship design until his death in 1749. Perhaps more significantly for naval development, expenditure on repairing and rebuilding ships, and on the upkeep of the dockyards fell from £237,277 in 1715 to £50,200 in 1721.

Having inherited the largest navy in the world, the new government recognised the need to preserve that position, and it made a concerted effort to systematise and standardise by updating the Establishments to which ships were built and operated, clearly expecting rationalisation to reap economic benefits. In July 1716 a new Establishment of Guns was introduced, this time aimed at securing a common armament for every ship of a given gun rating. This significantly increased the firepower of most ships of the line. In the case of three-deckers, 100-gun First Rates and 96-gun Second Rates were to retain their lower deck armament of 32-pounders (although new, longer guns were to be gradually introduced on First Rates), but

the former were to exchange their culverins and demi-culverins on the decks above for 24-pounders and 12-pounders, while the latter were to lose six smaller guns from their upperworks to restore them to a 90-gun rating. The three-decker 80s (all the remaining elderly two-deckers were to be rebuilt as three-deckers in the next few years) had their lower deck 32-pounders restored; this process opened up a sizeable gap in the broadside strength of three-deckers as opposed to two-decked ships of the line.

The overall size of the navy, in terms of the number of ships of each Rate, was also to be fixed for the first time. From 1714 the strength of the British navy was to be maintained until the early 1740s at precisely 124 ships of the line, of which 36 were three-deckers (with 7 being First Rates), while 88 were two-deckers (64 of the latter being Fourth Rates). After 1744 the number of three-deckers fell to 19 by the start of 1750, of which just 4 were First Rates; in the same period two-deckers increased to a total of 107. Both types rose again to reach 25 and 109 respectively by the end of 1754.



THIS lines and profile plan of the *Victory* of 1737 is annotated 'A copy of the draught that Sir Jacob [Acworth, the Surveyor] sent to Mr Naish for building the Victory by which the Board ordered she should be built'; this is followed in a different hand by 'A copy sent Mr Allin by the Board's order except some few alterations in ye ports, beams, & bulkheads expressed by being tickt.' This is important because an argument later arose between Acworth and Allin over the height of the stern, the Surveyor accusing the Master Shipwright of ignoring his directions. Allin certainly turned the tiny topgallant roundhouse into a full-blown poop royal, giving the ship a unique quarter gallery of four full tiers of lights. [NMM J1788]

Numbers of three-deckers

	30 APR 1721	1 DEC 1740	1 JAN 1749	28 MAY 1748	1 JAN 1750	1 JAN 1755
1st Rate (100 guns)	7	7	7	6	4	5
2nd Rate (90 guns)	13	13	13	11	10	13
3rd Rate (80 guns)	16	16	16	11	5	7

The *London* of 1718 Repair (non-Establishment) – construction history

VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
London	Benjamin Rosewell, Chatham Dyd	5.12.1718	1721	BU 10.1747

The *London* of 1718 Repair (non-Establishment) – dimensions in feet and inches

VESSEL	GUN DECK	KEEL	BREADTH	DEPTH	TONS
London	168 0	137 6	48 4½	19 2	1711$^{53}/_{94}$

The decision to fix the number of ships, coupled with the policy of rebuilding, was to disguise the size of the fleet that was actually available at any time. Rebuilding a three-decker was a process that lasted several years, while the ship was taken to pieces and totally reconstructed. Even some of the so-called 'Great Repairs' constituted a major reconstruction that often radically altered the capabilities of the ship concerned, but meant an equally long period before the ship was again ready for service. Yet all the while the ships concerned remained on the Navy List, ostensibly part of the current naval strength.

This became the standard practice. In 1717 the Navy Board recommended that when First and Second Rates were in need of rebuilding, the old ships could be taken to pieces and the re-usable wood stored in the dockyard until a suitable time for rebuilding occurred, while all the time the pile of timber concerned should be 'continued on the general list of the Royal Navy' under the name of the vessel concerned. The *Victory*, for example, was instructed to be taken to pieces in March 1721, but it was not until September 1733 that instructions to rebuild her were issued, and she was not re-launched until 1737. This administrative fiction kept the size of the navy from becoming a matter of party-political debate, and because of the lack of any serious conflict this state of affairs persisted unchallenged until the 1740s.

Note this was technically a 'Middling Repair' rather than a rebuild of the ship of 1706, altering her to the dimensions detailed above, and not to any Establishment.

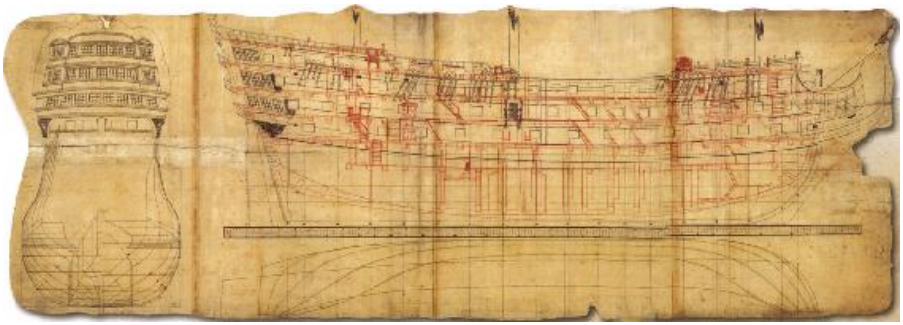
In June 1719 the Admiralty, recognising that the 1706 Establishment of Dimensions was inadequate in several ways, not least in that it made no provision for First Rates or for ships of less than 40 guns, instructed the Navy Board to consider 'in what manner [ships] may most properly be built (or rebuilt), to prove good sailors as well as Ships of Force, according to their several Rates.' The Board promptly summoned the Master Shipwrights from the various yards to

Deptford, where they met with the Officers of the Board over a period of twenty-two weeks to produce a report on the recommended 'Dimensions, Scantlings, Size of Bolts, and dimensions of Masts and Yards for a Ship of each Class'. Their recommendations, submitted on 13 November, were approved by the Admiralty on the 18th.

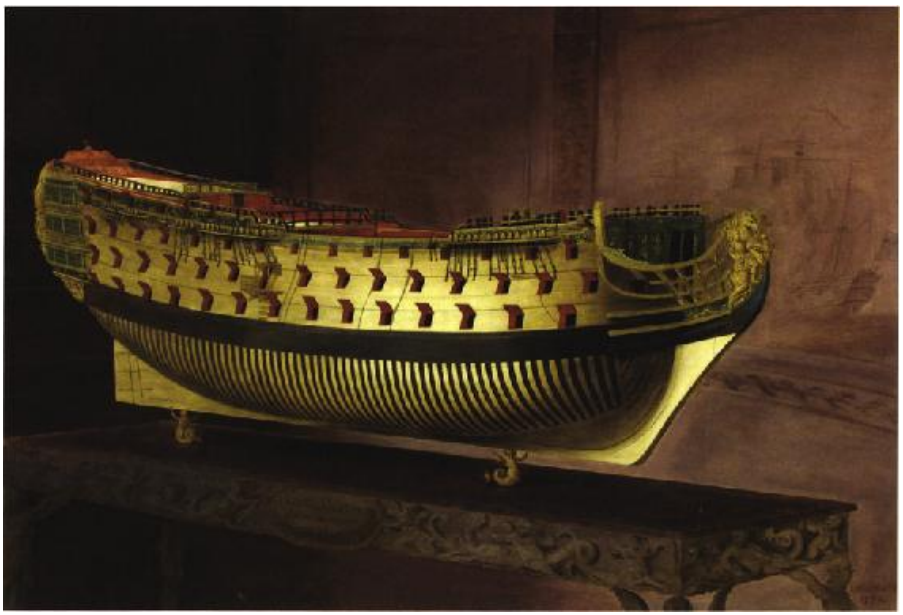
The scope of the Establishments was increased in a variety of ways. The 1706 regulations had only stipulated the major dimensions of each class of ship; in that sense they had hardly amounted to more than a updating of the common dimensions and armaments proposed in 1677 and 1691. Now the more detailed 1719 Establishment laid down dimensions for almost every timber in the ship, although the skilled design work of drawing a ship's lines and general shape was still left to the Master Shipwright in each Dockyard. As no further contracts to mercantile shipbuilders were to be required until 1739, this tended to reduce each class into a narrower series of designs, one from each of the Dockyards involved.

As there had been no previous Establishment for First Rates, in theory the Board was left in a quandary as to which dimensions should be used for 100-gun ships. They settled on the 1701 *Royal Sovereign* as a model 'that has generally been approved of'. In fact, the evidence of the previous chapter shows that this did not pose a major dilemma. The *Britannia* had just been rebuilt, explicitly to the dimensions of the *Royal Sovereign*, showing that the latter was already considered a standard for her successors. But now the proportions of the *Royal Sovereign* officially became the standard for all large three-deckers.

In 1720 there were seven First Rates in the Royal Navy, and although the *London* was enlarged to 1711 tons in 1721, there was no new construction and that number remained constant until 1727 when the *Royal Anne* was broken up. The total of six persisted until 1744 (including the *Royal Sovereign* and *Victory*, both rebuilt during this period) when it declined to five with the loss of the *Victory*. After the breaking up of the *London* in 1747 and the *Britannia* in 1749, the total fell to a low of three ships, but by 1753 two new First Rates were under construction.



ONE of the most detailed of the early draughts of First Rates, this combined sheer (external detail/lines, in black) and profile (internal detail, in red) of the *Royal George* of 1756 shows many features absent from its predecessors. Internal works include stairs and companionways, the double wheel, belfry, galley stove, and even light rooms in the magazines; external features include the entry port and some decorative work around the quarter galleries.
[NMM J1934]



ANOTHER model painting from the Kriegstein Collection, this portrait of the *Royal George* of 1756 is known to be the work of Joseph Binmer and John Marshall, dated 1779. There is a companion view, from the stern, in the National Maritime Museum at Greenwich. The details of the double equestrian figurehead agree with the model also at Greenwich.
[KRIEGSTEIN COLLECTION, USA]

DOMINIC Serres (the Elder) shows the *Royal George* in 1778, leading a small squadron. Although the ship is underway, there is a small hoy alongside, presumably under tow as she has no sail set. The colour scheme of the *Royal George* is worth noting, as red ochre was popular in the middle decades of the century and up until the widespread adoption of yellow ochre and black, under Nelson's influence, at the turn of century.
[NMM BHC3604]

Under the 1716 Establishment of Guns, the 100-gun First Rates were armed with twenty-eight 42-pounders (lower deck), the same number of 24-pounders (middle deck) and of 12-pounders (upper deck), and sixteen 6-pounders (12 quarterdeck, 4 forecastle). The guns on the three continuous decks compared with twenty-six 32-pounders, 18-pounders and 9-pounders on the same decks of the 90-gun Second Rate (which also had four fewer 6-pounders). Both 'new' (technically rebuilt) First Rates of this era, the *Royal Sovereign* and the *Victory*, were so armed.

The various Establishments provided that First Rates should have the dimensions given in the table, although no ships were built to the 1741 or 1745 Establishments (two ships ordered in 1746 and 1751 to the 1745 Establishment were finally completed to a modified design after 1754).

ROYAL SOVEREIGN (1729)

Having been laid up at Chatham since 1709, the *Royal Sovereign* was approved to undergo a Great Repair in 1723. This was carried out by

Benjamin Rosewell between October 1723 and March 1729 at a cost of £34,720. In the process she was made to conform to the 1719 Establishment. However, since that Establishment's requirements in respect of First Rates had been based on the 1701-launched *Royal Sovereign*, little structural change was needed to update her. As re-established she was still to carry exactly the same 100 guns, although the number of men was raised to 850.

The refitted ship was not commissioned for service for another twelve years. She required a further refit at Chatham between October 1739 and May 1740, at a cost of £13,245, and she was then fitted out as a flagship between November 1740 and April 1741, for a further £5122. In February 1741 she recommissioned under Captain Robert Allen, as flagship of Sir John Norris. In December 1743 she underwent a further refit at Chatham for £8232, which finished in March 1744.

VICTORY (1737)

The *Victory* of 1695 had been decommissioned in February 1705 and she was taken to pieces at Portsmouth in April 1721. Her name remained on the Navy List, but in fact she was simply a pile of reusable timbers in a corner of the Dockyard. In March 1727 it was decided that she should be rebuilt, this time to the specification of the 1719 Establishment. The keel was actually laid down by Joseph Allin in the dry-dock at Portsmouth in that month, but construction proceeded slowly until 1733.

In April 1732 the Admiralty, worried by the growth in size of foreign warships, instructed the Navy Board to enquire from the various Master Shipwrights as to their views on the best dimensions of each class of warship. From this emerged – rather more slowly than the Admiralty had hoped – sets of recommended new dimensions from the Master Shipwrights at the four principal dockyards. Little change was suggested for the First Rates, which most considered still served well, and certainly the principal dimensions went unchanged, other than a minor (6 inches) increase to the depth of the hold. The wartime complement of men was, however, increased from 780 to 850. In the summer of 1733, new orders were issued to the Dockyards. The rebuilding of the *Victory* at Portsmouth, and of the *Royal Anne* at Chatham, were ordered to follow the new Establishment.

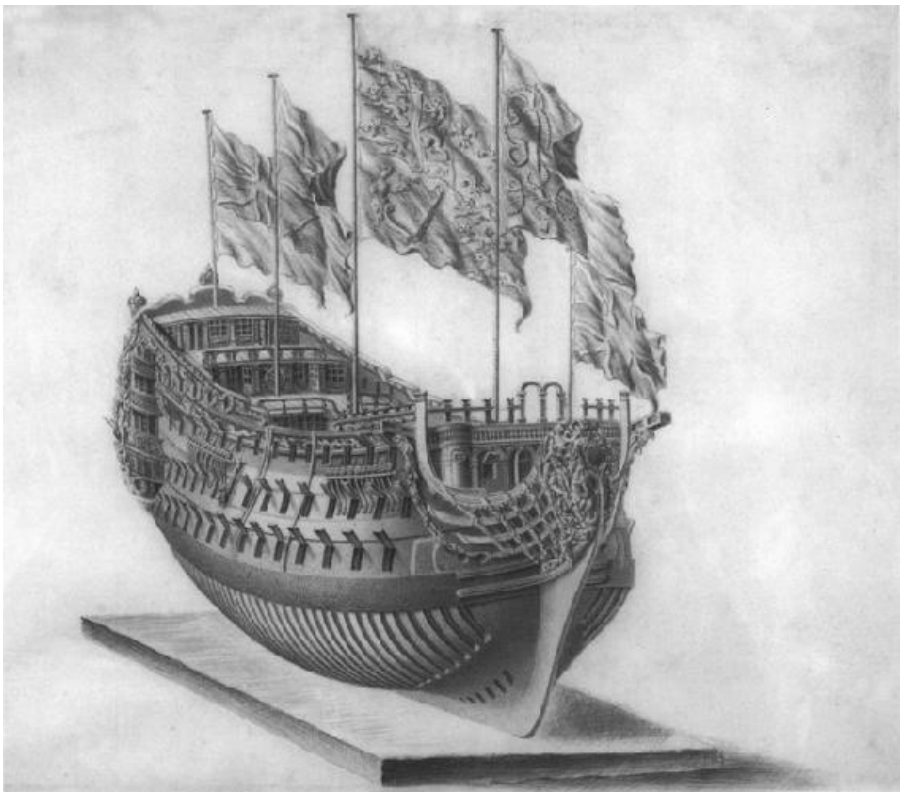
The conservative nature of the *Victory* design was to contribute to her short active life. When floated in February 1737, after eleven years on the stocks at a cost of £38,239, she was found to be comparatively high-sided, and consequently proved somewhat leewardly in service. A description of her by Blaise Ollivier, the Master Shipwright at Brest, who made an unofficial inspection of her in that

year, found her to be 'of great fullness at her height of breadth; her capacity is very great, yet her upper works are scarce suitable for her lower body, for she is deep-waisted with much sheer.'

The Establishments – summary of the growth in principal dimensions for First Rates

YEAR	TONNAGE	GUNDECK	KEEL	BREADTH	DEPTH	COMPLEMENT[2]
Establishment						
1719	1869 $^{4}\!/_{94}$	174ft	140ft 7in	50ft	20ft 0in	780
1733[1]	1869 $^{4}\!/_{94}$	174ft	140ft 7in	50ft	20ft 6in	850
1741[1]	1893 $^{63}\!/_{94}$	175ft	142ft 4in	50ft	21ft 0in	850
1745	1999 $^{73}\!/_{94}$	178ft	144ft 6$^{1}\!/_{2}$in	51ft	21ft 6in	850

[1] proposed Establishment only. [2] maximum wartime personnel



A monochrome variation on the genre of paintings of models, this pen-and-ink example shows the *Victory* of 1737 with the flags and stump masts displayed during the launching ceremony. Known to history as 'Balchen's *Victory*' after the admiral commanding the ship when she was wrecked, the ship was notoriously unhandy – the high stern must have contributed to her leewardly sailing performance, which was commented on by Blaise Ollivier when the French ship designer made an unofficial inspection in 1737. It is a reasonable speculation that her consequent poor handling in heavy winds would have contributed to her tragic loss. Note that the ship has an entry port on the middle deck on the starboard side, as well as in the

traditional location on the port side.
[KRIEGSTEIN COLLECTION, USA]

The First Rate of the 1719 Establishment – construction history

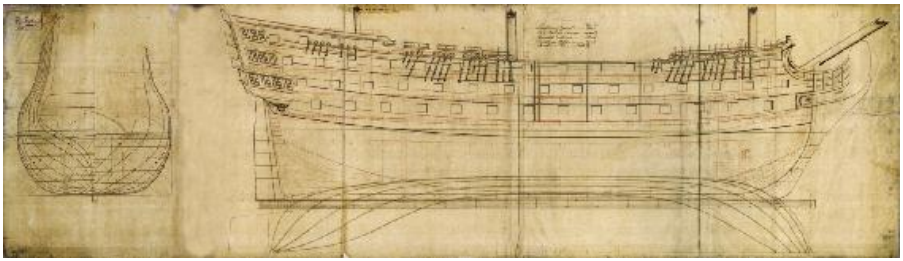
VESSEL	BUILDER	ORDERED	LAUNCHED	FATE
Royal Sovereign	Chatham Dyd	18. 2.1724	5. 3.1729	Re-classed as 90-gun Second Rate 1756; guardship 1759; BU 4.1768.

Notes: Rebuilt to 1719 Establishment from ship of 1701, in fact classed as 'Great Repair' (rather than rebuilt); the 1719 Establishment was based on the former dimensions of this ship as rebuilt 1701. According to Admiral Vernon in 1744, one of 'the two finest ships of this rank that ever I saw at sea' (the second being the 70-gun *Royal Oak*).

The First Rate of the 1719 Establishment – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Establishment:	174 0	140 7	50 0	20 0	1859 43/94
– as completed:					
Royal Sovereign	175 0	140 0	50 3½	20 1	1883 46/94

THOMAS Buttersworth's watercolour rendition of the loss of the *Royal George* in August 1782. Although Buttersworth was a seaman and his work is noted for its attention to nautical detail, he was probably too young to have been an eyewitness to the event – and it was certainly painted much later – so this may account for the apparent lack of drama in his painting. On the other hand, the capsize took place very suddenly (which is why so many died) and there may not have been time for any sense of emergency to arise among those in the immediate vicinity.
[NMM PAH9500]



THE lines of the *Britannia* of 1762, a clean but rather basic sheer, half-breadth and body plan of the kind that would become the norm. It represents the original design intentions, rather than the ship as actually built (which might differ in details) and seems to have been the record copy kept by the Surveyor's office.
[NMM J1829]

Although the *Victory* was, like her predecessors, to carry 28 guns on each complete deck, the middle deck contained a fifteenth pair of gunports, situated directly above the aftermost gun port on the gun deck. This extra pair of ports, placed between the side counter timber and the perpendicular, was a feature unique among British 100-gun ships. The guns were, as before, all bronze, the *Victory* being the last British three-decker to retain this expensive feature; following her loss, the Admiralty moved to a policy of using iron guns in all circumstances.

The *Victory* was certainly an imposing vessel. She was the only British three-decker to have four complete tiers of quarter galleries, with four rows of lights and three open balconies at the stern. Sadly this very characteristic compromised both her sailing qualities and her stability, causing her to roll heavily in stormy weather, to the extent that Sir John Norris, who flew his flag in her between her completion and his own retirement from sea service in 1744, complained to the Surveyor, Jacob Acworth. In this case the real culprit was Joseph Allin, the Master Shipwright who built the ship and pointedly ignored Acworth's frequent injunctions to keep his ships' upperworks low and snug. As it transpired, *Victory*'s deficiencies were such that she required several refits even before entering service. Matters were not helped when she collided with the 60-gun *Lion* and lost her head and spritsail yard, soon after Norris – as commander-in-chief of the Channel Fleet – took her to sea at the head of a squadron of sixteen warships charged with clearing the Channel of Spanish privateers. Back she went into Portsmouth for repairs, and Norris temporarily shifted his flag to the 80-gun *Boyne*. That autumn, a further £12,653 was spent on fitting the *Victory* for service as a flagship.

Early in the spring of 1741 her first captain, Thomas Whitney, was retired (he died soon after) and command passed to Captain Samuel Faulkner, formerly her second captain, who was to remain aboard for

the rest of his (and the ship's) short life. Sir John Norris again raised his flag on board, and put to sea in July, and once more in October, to cruise with a fleet off the north coast of Spain. She required a further refit at Portsmouth from November 1741.

In 1743 Sir John Norris reached the pinnacle of the service, being promoted to Admiral of the Fleet. In the following February he again sortied from the Downs aboard *Victory* with a fleet that turned back a French force threatening invasion. A month later Norris finally retired from sea service, and was succeeded as commander-in-chief of the Channel Fleet by Admiral Sir John Balchen. A British supply convoy destined for the Mediterranean was blockaded in Lisbon harbour in April by a French fleet under Admiral de Rochambeau, and Balchen was despatched, again with *Victory* at the head of a sizeable squadron, to lift the blockade. He successfully achieved his object, and escorted the supply convoy as far as Gibraltar, before turning back for the Channel. At the start of October the squadron re-entered the Western Approaches before encountering a severe storm. *Victory* was separated from her consorts on 4 October. The rest of the fleet safely reached Plymouth on 10 October, but *Victory* disappeared with all hands.

For many years it was believed that *Victory* was wrecked on the Casquets, off Alderney. It was only in 2008 that her remains were located and identified about 100 kilometres further west of those rocks and it appears that the ship foundered.

THREE DECADES OF INACTION

It was not simply in design terms that the British First Rates stagnated during this period. Between the decommissioning of the *Royal Sovereign* and *Royal Anne* in late 1710, and the bringing into service of the new *Victory* in 1740, only a two-year stint off the Tagus by the *Britannia* in 1734–36 saw any First Rate in commission. This lack of operational use meant that senior officers (and their juniors and ratings) were robbed of any opportunity to learn how to handle First Rates at sea, or in action. In such circumstances, even the rebuilding of the ships did not help, as the completed vessels went straight into Ordinary.

The exigencies of the Spanish war of 1739 demanded little in the way of extra three-deckers. In part this was due to the nature of the conflict, which produced few fleet actions and an emphasis, for the first time, on amphibious operations in support of the worldwide imperial role which the navy now found itself ill-equipped to meet. But equally relevant was the Admiralty's evident unhappiness with the current designs emanating from the Surveyor's Office, and the rigidly enforced dimensions, which most of the new Admiralty Board that

came to power in 1744 recognised as totally inadequate.

A new set of Establishment dimensions were therefore issued in 1745. There was relatively little criticism of the First Rates (perhaps because there was so little recent experience with them), so the alteration to the Establishment dimensions was a modest enlargement, a lengthening by three feet along the gundeck (26½ inches along the keel), a broadening of the design by some twelve inches, while six inches was added to the depth in hold. This brought the total burthen to almost exactly 2000 tons.

Because the wartime requirement was for ships which could be built swiftly, while a three-decker could take most of a decade to bring into service, only a single order was placed over the next five years. The *Royal Anne* had been lying in Ordinary at Chatham since 1710. An instruction to rebuild her had been issued on 21 March 1727, and in May of that year the old ship was taken to pieces there for rebuilding. But nothing more was done for over nineteen years. Now in August 1746 a new instruction was issued to rebuild the *Royal Anne* according to the dimensions of the 1745 Establishment. She was laid down at Woolwich Dockyard on 8 January following, and on 7 August 1747 an estimate of the new construction was sent to the Admiralty, quoting a cost for this rebuilding of £49,700. A second ship to this design was ordered in 1751, to be built at Portsmouth.

The First Rate of the Proposed 1733 Establishment – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Victory	Portsmouth Dyd	21. 3.1721	6. 3.1727	23. 2.1737	Foundered 5.10.1744 west of Alderney

The First Rate of the Proposed 1733 Establishment – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Establishment – as completed:	174 0	140 7	50 0	20 6	1869 $^{43}/_{94}$
Victory – as built	174 9	141 7	50 6	20 6	1920 $^{56}/_{94}$

The new *Royal Anne* was laid down at Woolwich, although she was to be renamed in honour of the king prior to launch. One other significant change had been brought in with the 1745 Establishment: all responsibility for ship design had been taken away from the Master Shipwrights at the individual dockyards. Even under Acworth the Master Shipwrights had been subject to the Surveyor's guidance and criticism, which sometimes extended to his recommendation of hull forms, but now the design process was centralised in the Surveyor's office, while Master Shipwrights henceforth were responsible for

strictly following those plans, and played very little role in the design.

Due to the period of time taken to build a three-decker, several Master Shipwrights held responsibility at various times, and the one named in Admiralty records (*eg* in the Progress and Dimensions Books) is the one under whom the ship was finally delivered, but who often had had only a late role in the ship's construction. This was certainly very true of the ships ordered in 1746 and 1751. The *Royal Anne* was begun under Thomas Fellowes, but in May 1752 Thomas Slade was given a temporary three weeks appointment as the Master Shipwright at Woolwich, and subsequently Adam Hayes took over. In March 1753 Edward Allin was placed in charge, and he remained until December 1755, when Israel Pownoll took over for the final period of the ship's construction.

One month before her launch, the new ship exchanged names with the elderly *Royal George*, so that the new First Rate would carry the reigning monarch's name. When she entered the water, the *Royal George* had cost £54,661 to build, and a further £10,613 was spent fitting her out for service. She joined the Western Squadron, and served as the flagship of Vice-Admiral Edward Boscawen. Later she became the flagship of Admiral Sir Edward Hawke, and as such took part in the Battle of Quiberon Bay on 20 November 1759. She saw more active service during the War of American Independence, but in August 1782 she foundered while being heeled for minor repairs off Spithead, with the loss of most of those aboard, including Rear-Admiral Richard Kempenfelt. The reasons for her loss remain controversial to this day, but some reports blamed structural failure brought on by the additional stresses of careening.

The sister-ship at Portsmouth was begun by Master Shipwright Peirson Lock. In December 1755 Edward Allin was moved from Woolwich to take charge at Portsmouth, and he supervised the construction until May 1762, when Thomas Bucknall was given the task. Although launched in 1752, the new ship, named *Britannia* (her predecessor of this name had been broken up in 1750), was not brought into service until 1779, having been fitted for Channel service over the preceding year. She saw little active service during the closing years of the War of American Independence, but underwent further refits during the 1780s. She was brought back into service for the French Revolutionary War, serving as Vice-Admiral William Hotham's flagship in 1793–95, and then that of Vice-Admiral Charles Thompson in 1797. She paid off in February 1798, but was recommissioned when war was renewed in 1803 and was the Earl of Northesk's flagship at Trafalgar in 1805.

The *Britannia* was relegated to harbour service in June 1806; she was renamed *Princess Royal* on 6 January 1812, but became the *Saint*

George just twelve days later, She served as a prison ship at Plymouth in 1814, and was subsequently refitted and recommissioned as a receiving ship and was finally to become the *Barfleur* on 2 June 1819.

The First Rates of the 1745 Establishment, as Modified – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
First Rates:					
Royal George	Woolwich Dyd	27. 8.1746	8. 1.1747	18. 2.1756	Foundered at Spithead 29.8.1782
Britannia	Portsmouth Dyd	28. 3.1751	1. 7.1751	19.10.1762	Prison ship 1813; BU 2.1825

The First Rates of the 1745 Establishment, as Modified – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Modified Establishment	178 0	144 6¾	51 10	21 6	2065 $^{53}/_{94}$
– as completed:					
Royal George	178 0	143 5½	51 9½	21 6	2046 $^{64}/_{94}$
Britannia	178 0	143 2	52 0½	21 6	2091 $^{35}/_{94}$

CHAPTER

5

Anson's New Navy

MONAMY Swaine here captures the *Victory* under way at an early stage of her career, showing off the open stern galleries with which she was fitted when first completed. The mizzen still carries a long lateen yard, but the sail is cut to fit to the mast – the first step towards its replacement by a properly fore-and-aft gaff and boom spanker.
[NMM BHC3696]

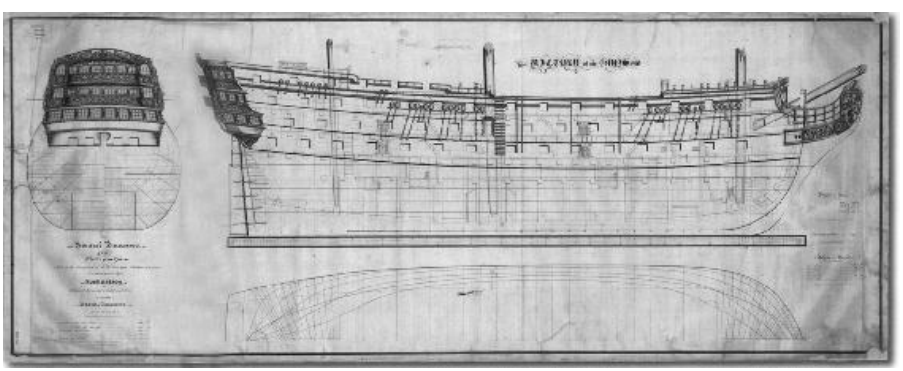
George Anson served as a member of the Admiralty Board from 1744, and was its most prominent naval member, but it was not until he became its First Lord in 1751 that he felt free to introduce radical reforms to both the administration and the material of the Royal Navy. The period of the Establishments had been a disaster as regards the development of ship design, with the ultra-conservative Navy Board resisting any change to its established practices. Most strongly it fought against any alteration in the Establishments, determined to maintain uniform standards in the size and fitting of each rate of ship.

By 1750, however, it was no longer possible to argue that the

Established dimensions provided ships large enough to counter the ever-growing French and Spanish ships of the line. Reluctantly, the Admiralty accepted that the existing dimensions were too restrictive, and issued instructions 'to make such variations in the said ships from the present establishment as shall be thought necessary to make them better ships for war.' For the First Rate under construction at Woolwich, this meant that the design was amended to broaden the ship by a further ten inches.

In 1755 there were only three 100-gun ships afloat: the *Royal George* (1715), *Royal William* (1719) and *Royal Sovereign* (1729). The elderly *Royal William* had seen no sea service, being laid up since her launch in 1719, and in 1756 was cut down to a Second Rate of 84 guns. The new *Royal Anne* was nearing launching stage; an Admiralty Order of 26 February 1755 instructed the Navy Board to complete and fit her for sea 'for the reception of a flag officer of the highest rank with two captains under him'. Before her completion, however, the Admiralty decided on 10 January 1756 that the new *Royal Anne* and the elderly *Royal George* should exchange names. The new First Rate accordingly became the *Royal George* on 19 January, and was launched at Woolwich on 18 February 1756.

The mid-century 100-gun ship had twenty-eight 42-pounders on the lower deck, the same quantity of 24-pounders on the middle deck and of 12-pounders on the upper deck. The complement of guns was completed by sixteen 6-pounders (twelve on the quarterdeck, and four on the forecastle), while a wartime complement of 850 men was set to run the ship.



THIS draught of Slade's 'masterpiece', the *Victory*, is a copy of an 'as fitted' plan and was drawn in 1830 by which time the ship was a national icon. Given the decorative typography it was probably made for display or demonstration purposes, but depicts the ship as completed and not in the Trafalgar appearance that was responsible for her fame. In the years leading up to the American Revolutionary War, it became standard practice to produce draughts of ships *after* they were completed ('as fitted'), which usually included the decorative work absent from design plans; this is probably a copy of one such draught. The ship proved the most

successful First Rate of the century.
[NMM J1842]

In December 1758 the Pitt administration gave orders for the construction of twelve new ships of the line, and instructions for nine of these were issued by the Navy Board later that month. The majority of these were to be 74s and smaller two-deckers, but they were to include one First Rate and one Second Rate. The draughts for all these ships were drawn up by the new Surveyor, Thomas Slade, early in 1759. This gave Slade his first (and as it transpired, only) chance to design a First Rate. Slade submitted a design for this on 6 June, and it was approved by the Navy Board on 15 June, while the Second Rate was approved on 6 November, The two three-deckers were to be built simultaneously in Chatham Dockyard, under the direction of the Master Shipwright there, John Lock, until 1762 when Lock's retirement saw his replacement by Edward Allin.

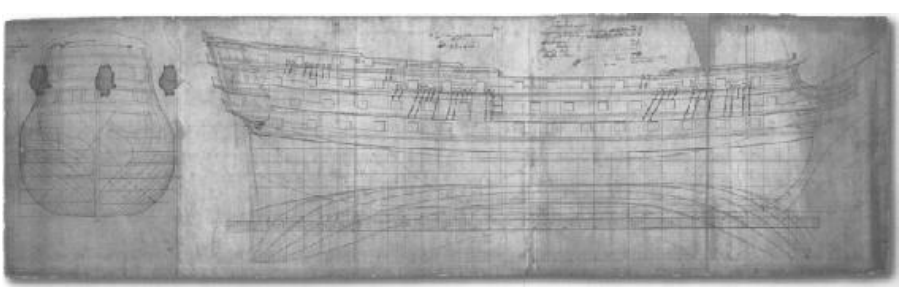
The *Victory* Class (Slade design of 1758) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Victory	John Lock[1], Chatham Dyd	13.12.1758	23. 7.1759	7. 5.1765	Preserved 3.1922.

[1] replaced in 1782 by Edward Allin, who completed and delivered both *Victory* and the (Second Rate) *London*.

The *Victory* Class (Slade design of 1759) – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Design	186 0	151 3⅛	51 10	21 6	2162 $^{33}/_{94}$
– as completed:					
Victory	184 0	152 6⅜	51 7½	21 6	2162 $^{53}/_{94}$



THE design plan for the 'First Rate 100 guns' that became the *Royal Sovereign* of 1786. Despite very similar dimensions and proportions to the *Victory*, this ship was never so highly regarded as her predecessor: in fact, on the lower deck she was known as 'the Westcountry wagon', a jibe associating her poor sailing qualities with her Plymouth-build (she was the first of her rate constructed at the Devon yard).
[NMM J1807]

The new ship was designed to be some eight feet longer than the

1745 Establishment. This allowed Slade to provide for a fifteenth pair of heavy 42-pounders on the lower deck. An extra pair of 12-pounders was also fitted in on the upper deck, with a consequent reduction in the small 6-pounders (one pair removed from the quarterdeck and another pair from the forecastle).

No name was assigned to the 100-gun ship until 30 October 1760 when, at the Prime Minister's instigation, she was named the *Victory* to commemorate the 'Year of Victories', 1759, which had seen a series of spectacular naval and military successes at the height of the Seven Years' War. By the time of her launch in 1765, the war was over, and so she was immediately placed in Ordinary at Chatham. During the next four years she was completed and fitted out, undergoing sea trials in 1769; however, there was no demand for her to be brought into service during the decade of peace that followed the Seven Years' War, and it was not until France declared war again, in support of the rebellious American colonists, that she was refitted for sea and commissioned. It was at this time that Admiral Keppel, whose flag was to be raised in her in May 1778, argued that the 42-pounders with which she had been completed should be replaced by 32-pounders.

The Changing Shape of the Bow

While the basic layout of the First Rate remained unchanged for most of its existence, it was subject to constant design improvement which affected its appearance – the amount of sheer (or relative flatness of the decks), for example, or the architecture of the stern. A detailed understanding of these changes helps to date models and paintings, and nowhere is this more apparent than at the bow, where the shape and angle of the cutwater, the arrangement of the headrails, and the style of the figurehead provide evidence for precise dating.

The earliest three-deckers, like the *Prince Royal* retained the long, low beakhead of the Elizabethan galleon, with low flat sides carrying decorated panels; this allowed an equestrian figurehead to take on a naturalistic, almost free-standing pose. The stem curved up from a rounded fore-foot. This design was retained for the *Sovereign of the Seas*, even though the complex decorative work must have been very susceptible to damage in a seaway. The obvious response was to shorten and elevate the head, while open, curved headrails were introduced to allow seas to wash through the head. As can be seen from the *Royal Charles* in this 1660s drawing , this tended to produce a straight but heavily angled stem and a far more upright figure. The Kriegstein model of the *Royal James* of 1671 shows that this pattern persisted for more than a decade, but also demonstrates the rather awkward angle forced on the figure; the straight stem meets the keel at an angled fore-foot.

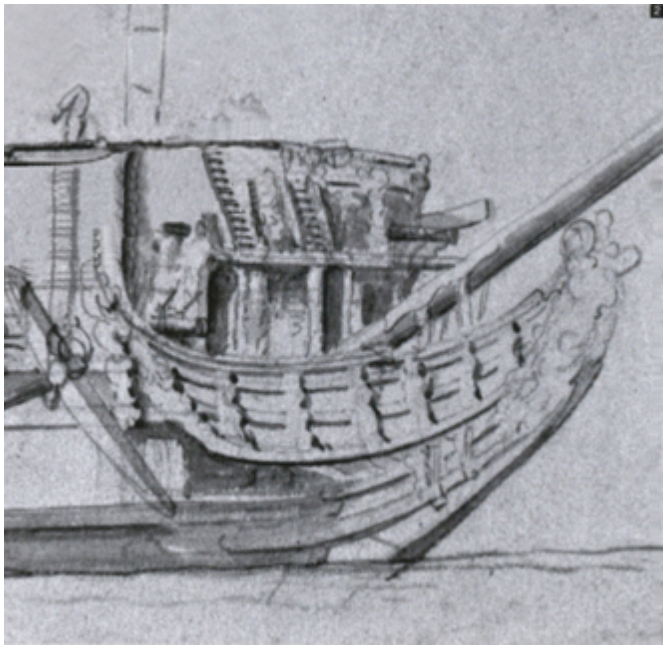
The principal advantage of a low head was that it allowed forward fire from guns on and under the forecastle, as seen in the prominent gunports in

the beakhead bulkhead of the *Britannia* of 1682 ; by this time, the head is shorter but the figure is becoming ever more elaborate, but faired into a rounded stem, testing the ingenuity of the carver. By the beginning of the eighteenth century, the head has become shorter but very deep – the four rails on this draught of the *London* of 1706 is typical of the Queen Anne period and signals the end of the two-deck-high beakhead bulkhead. With the top of the stem now almost vertical, the equestrian figurehead was an awkward proposition, as demonstrated by the Annapolis model of the *Royal William* of 1719 , where the horse's front leg is anatomically impossible. In fact, at this point the figurehead designers gave up trying to put a single complete statue on top of the bow, but developed instead a double figure in mirrored high relief on each side of the stem.

In the eighteenth century the head became higher and lighter, with only three sets of rails, but the double figurehead was now established, as can be seen clearly in this model painting of the *Royal George* (1756) from the Kriegstein collection . An exception to this was the *Queen Charlotte* of 1790, whose figure was a canopied portrait of the lady herself in coronation regalia, an unusual choice that required detailed drawings to be produced .

The flat beakhead bulkhead was only lightly timbered and in action proved vulnerable to raking fire from ahead. The bow-on approach at Trafalgar in 1805 underlined this, and shortly afterwards the Surveyor, Sir Robert Seppings, introduced the most radical redesign of the bow for two centuries. By carrying the main framing of the hull right up to the top of the forecastle he produced what was called the 'round bow', a novelty that required special drawings to be sent to the dockyards – this one is dated 24 June 1811 relates to the *Saint Vincent*, 120 guns, and shows the new framing and arrangements for the chase ports and access doors to the head. At this point the head itself has not been moved, but it soon proved possible to reposition it one deck higher.

NMM F2574



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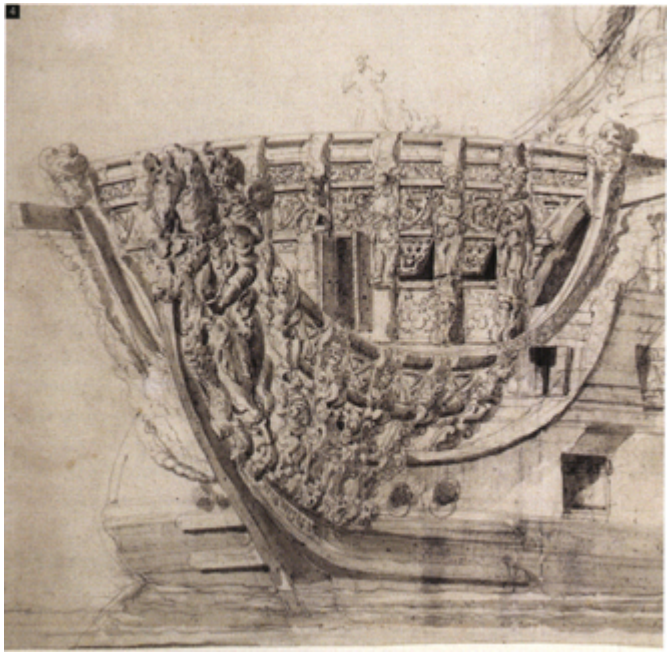
KRIEGSTEIN COLLECTION, USA



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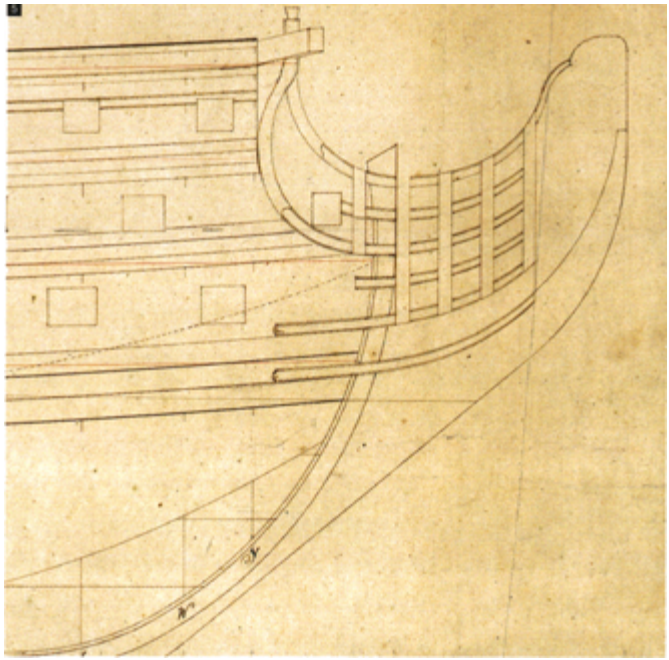
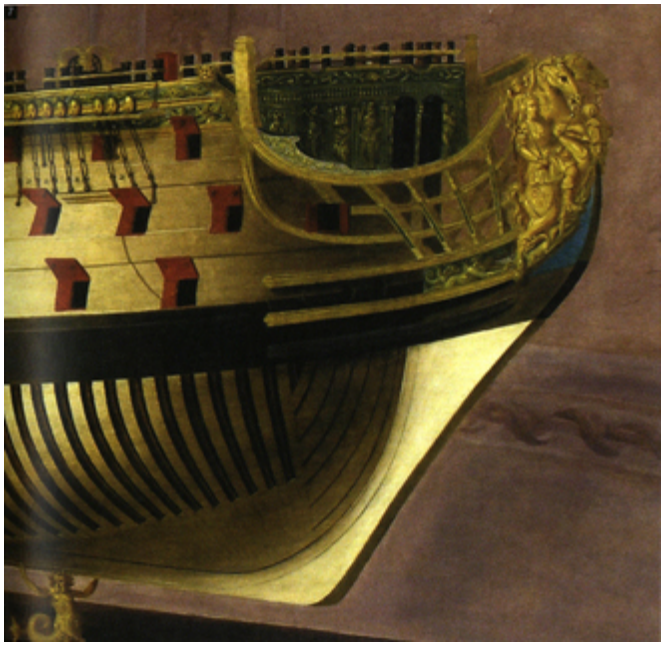


NMM J1831

US NAVAL ACADEMY MUSEUM, ANNAPOLIS

Seppings went on the radically revise the stern and the basic structure of the Navy's ships, and this model was produced to demonstrate the differences. It is divided down the centreline, the portside (right in this view) being the traditional mode with the new pattern on the starboard side. Note how the elimination of the beakhead allowed a far smaller head to be positioned higher, where wave damage was less likely. Other innovators followed Seppings, and this is a design proposed by Thomas Roberts, Master Shipwright at Plymouth, in 1819. It simplified the complex joinery of the headrails, but its principal advantage was improved bow-chase fire from an elliptical forecastle barricade. These improvements, or variations thereon, can be seen in this model of the *Queen* of 1839 . The head no longer dominated the bow, its relative insignificance being emphasised by this view of the launch of the *Royal Albert* at Woolwich on 13 May 1854, although the figure of the Prince Consort still grabs attention. Figures had been shortened to a mere bust since the Napoleonic Wars and post-war this applied to First Rates as well, although they might still be elaborate creations – this is one of the last, the design for the *Victoria* of 1858, before the ship was renamed *Windsor Castle*.



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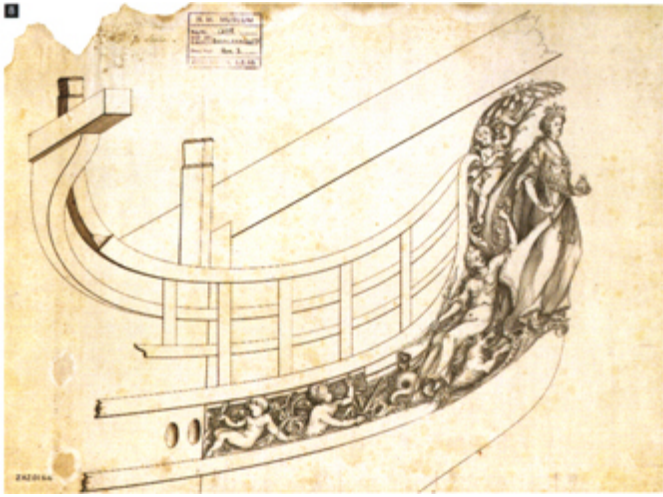

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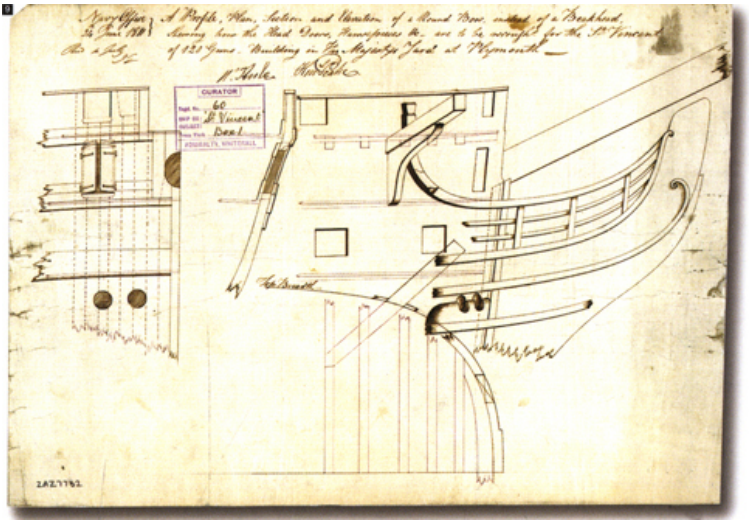

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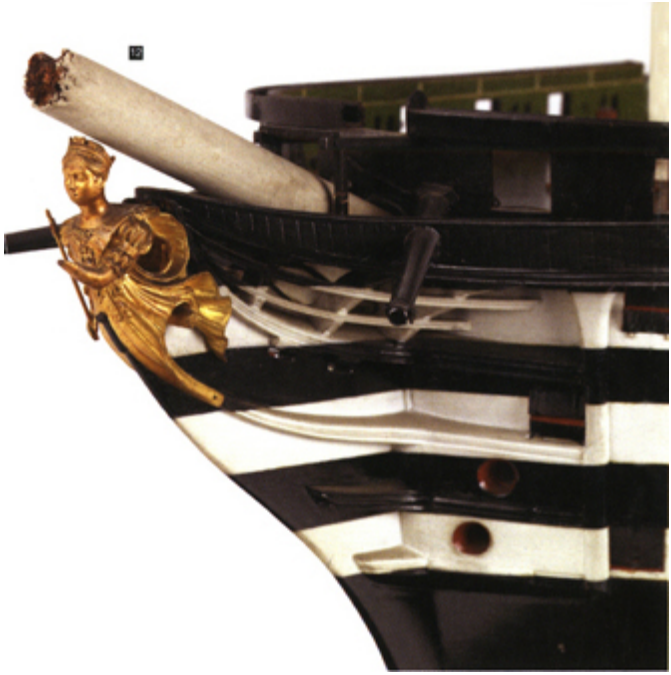

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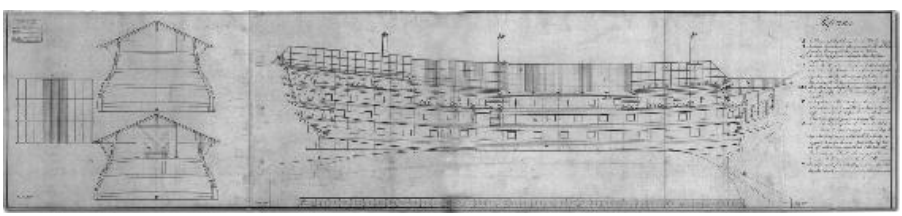


THE regular roofing-over of ships in Ordinary is usually regarded as a practice brought in after the Napoleonic Wars, but this draught shows just such a scheme for the newly completed *Royal Sovereign*. The design allowed the ship to retain her lower masts and there was a separate covering for the head. The cross-sections show the manner in which the roofing was supported both amidships and further aft above the quarterdeck. The planking of the roof was angled to aid water run-off and caulked to prevent rain entering.
[NMM J7470]

Following this re-armament, the *Victory* mounted thirty 32-pounders, twenty-eight 24-pounders, thirty 12-pounders and twelve 6-pounders (the latter now disposed ten on the quarterdeck, two on the forecastle), and it was with this armament that, flying Keppel's flag, the *Victory* led the British attack on the French off Ushant in July 1778. However, following her return to Portsmouth, and Keppel's replacement in March 1779, she had the 42-pounders reinstated and

retained these until 1797 – indeed, they were still carried by *Victory* at the Battle of Cape Saint Vincent in February 1797.

The *Victory* underwent a major ('Large') repair from December 1787 to April 1788; following Saint Vincent, she was relegated to harbour service as a hospital ship from December 1797 until January 1799. She then had an extended refit at Chatham, after which she was returned to active service as Lord Nelson's flagship. After the Battle of Trafalgar, the *Victory* was perceived as being too old for further service as a First Rate and needing a reduction in the weight of armament to be carried; she was relegated to the Second Rate in November 1807, with two 32-pounders removed from her lower deck so that she was rated as just 98 guns, and with her 24-pounders on the middle deck replaced by 18-pounders; she was then remeasured as 2088 tons.

She was employed as a troopship from December 1810 until April 1811. Subsequently she was used as a prison ship from 1813, but in February 1817 she was restored, like all the other Second Rate three-deckers, to the First Rate and listed as 104 guns. She was dry-docked in January 1822, but recommissioned in January 1824 as the Port Admiral's flagship at Portsmouth, a task from which she was paid off in April 1830. It was intended to dispose of her, but following an outcry against breaking up Nelson's famous flagship, she was reprieved, to become one of the earliest examples of ship preservation. She remained afloat until 1922, when she was eventually moved into the dry-dock at Portsmouth where she remains to this day.

By January 1771 there were only three First Rates on the Navy List, following the deletion of the *Royal Anne* (originally *Royal George*) in 1767 and of the *Royal Sovereign* in 1768. A new *Royal Sovereign* was therefore ordered in 1772, although she was not to be launched until 1786. The design by a new Surveyor, John Williams, was approved in 1772, but in many respects his was a more conservative approach than that for the *Victory*. The arrangement of lower deck gunports reverted to the Establishment quota of fourteen pairs (as did the middle deck), although still with fifteen pairs on the upper deck.

The work at Plymouth Dockyard was started under Israel Pownoll, but from November 1775 John Henslow was the yard's Master Shipwright until he was appointed a Surveyor of the Navy (jointly with Williams) in November 1784; Thomas Pollard took over at Plymouth to complete the *Royal Sovereign*.

Two significant changes in ordnance arrangements came about towards the end of the 1770s. The difficulty of handling a 42-pounder shot rather than a 32-pounder, especially in a seaway, had always meant that the larger guns suffered a much slower rate of fire. In 1778 Admiral Augustus Keppel, then flying his flag aboard the *Victory*,

successfully applied for the ship's 42-pounders to be replaced by 32-pounders, but this remained a one-off experiment for more than a decade. Eventually in 1790 the 42-pounder guns which remained on the lower deck in most First Rates were ordered to be replaced by 32-pounders, as the opportunity arose, although the last few 42-pounders were not removed from service for many years, the *Royal George* and *Britannia* retaining their 42-pounders until 1807.

The second change was the development in the late 1770s by the Carron ironworks in Scotland of a lightweight, short-barrelled weapon that came to be called the carronade. Experiments with the prototypes were very successful, and the Admiralty decided to fit carronades into the upperworks of all ships of the line, to supplement their existing long guns. While these were not able to match the range of the traditional long gun, they were considered useful additions to ships' short-range firepower against enemy personnel and rigging. In the Ordnance Board's first Establishment for carronades of 13 July 1779, ten 12-pounder carronades were assigned to each First Rate in addition to their carriage guns, eight to be mounted on the poop (roundhouse top) and two on the forecastle, in addition to the 6-pounder guns there. These early carronades were only 26in in length and weighed 5¾cwt. Interestingly, the new guns were not added to the ships' nominal gun-rating, so that the First Rate remained 'a ship of 100 guns'; for the next 37 years, carronades were not counted in a ship's rating except where their installation was at the expense of a long-barrelled gun.

The next First Rate was not ordered until 1782. However, by the end of 1792 there were two further ships on order, with a design enlarged to 110 guns. As in earlier times, First Rates did not usually see active service during peacetime (and even in 1778 only one was commissioned), but notably all five 100-gun ships were recommissioned between December 1792 and September 1793 in a period of tension leading up to the outbreak of the French Revolutionary War.

FROM the earliest days the design process involved both a draught and a block model, or a 'solid' as it is usually called in official correspondence. Many found the three-dimensional projection easier to understand than a complex pattern of lines on paper, and the models probably took no longer to make than it did to make a fair copy of the draught. They usually had the main features painted on, although – as demonstrated by this block model of the *Royal Sovereign* of 1786 – the open stern galleries are cut out. Being robust items, and ones that were probably retained as part of the design record, many survive and are now kept in the reserve collection of the National Maritime Museum.
[NMM F5862-003]

BATTLES OF THE NAPOLEONIC WARS

Before turning to the technical development of the First Rates during the Napoleonic era, it is appropriate to consider the service history of British First Rates during the quarter-century of conflict that began with the French Revolution. Given the long time required to build a First Rate, it was inevitably the pre-war ships that played the greatest part in what the pre-1914 generation called the 'Great War'. During this period, all the older First Rates served as flagships at most of the major battles.

The *Britannia* and *Victory* took part in the attack on Toulon in August 1793, in Hotham's Action off the nearby Hyères Islands in July 1795 (in his previous action off Genoa in March, only the *Britannia*

was present), in the Battle of Cape Saint Vincent in February 1797, and of course in the classic battle off Cape Trafalgar in 1805 (when the *Royal Sovereign* was also a flagship). Of the later ships, the *Queen Charlotte* and *Royal George* took part in the Glorious First of June battle in 1794 (along with the *Royal Sovereign*) and in Bridport's Action off Île Groix in June 1795. Only the *Ville de Paris* (the British-built ship named after the French prize lost in 1782) saw no major fleet action during the war, while the new *Hibernia* and *Caledonia*, which were only to enter service in 1805 and 1808 respectively, were too late to participate in the major actions of these wars, although the last-named ship was flagship during the attack on the French squadron in the Basque Roads in April 1809.

During the occupation of Toulon, the *Victory* flew the flags of both Vice-Admiral Samuel Hood and Rear-Admiral Sir Hyde Parker, while the *Britannia* carried the flag of Vice-Admiral William Hotham. On the Glorious First of June, the *Royal Charlotte* was the flagship of Admiral Earl Howe, and his two Vice-Admirals were in the other First Rates present, Sir Alexander Hood aboard the *Royal George* and Thomas Graves in the *Royal Sovereign*.

William Hotham flew his flag aboard the *Britannia* during the 1795 actions in the Western Mediterranean, as a Vice-Admiral off Genoa in March, and as a full Admiral off Hyères in June, when Rear-Admiral Thomas Mann was the flag officer aboard the accompanying *Victory*. In June of the same year, Lord Bridport commanded his fleet off Île Groix from the *Royal George*, the *Queen Charlotte* being a private ship (*ie* not a flagship) during this action.

For the battle against the Spanish fleet off Cape Saint Vincent in 1797) Admiral Sir John Jervis had the *Victory* as his flagship, while Vice-Admiral Charles Thompson flew his flag aboard the *Britannia*. At the next two major naval battles of the Revolutionary War – Duncan's defeat of the Dutch at Camperdown in October 1797, and Nelson's destruction of the French fleet at Aboukir (the Battle of the Nile) in August 1798 – no three-decker was present in the British line of battle, the largest ships present being two-decker 74s.

The renewal of war from 1803 onwards produced only one major campaign in which First Rates saw action – that culminating in the Battle of Trafalgar in October 1805. Here three 100-gun ships took the leading roles: Vice-Admiral Horatio Nelson led the Weather column in the *Victory*, while Vice-Admiral Cuthbert Collingwood led the Lee column aboard the *Royal Sovereign*, the first ship into the action that day; the remaining British flag officer present was Rear-Admiral William Carnegie (the Earl of Northesk) aboard the *Britannia*, placed fifth in the Windward column.

The *Royal Sovereign* Class (Williams design) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Royal Sovereign	Thos Pollard, Plymouth Dyd	3. 3.1772	7. 1.1774	11. 9.1786	Renamed *Captain* 17.8.1825, hulked 6.1826, BU 8.1841

Notes: Although the *Royal Sovereign* was sometimes described as a Hunt design, Hunt did not become Surveyor (initially Joint Surveyor) until March 1778. Carried twenty-eight 32-pounders (lower deck), thirty 18-pounders (middle deck) and forty 12-pounders (30 upper deck, 8 quarterdeck, 2 forecastle). Complement 750. [1] 2 × 32-pounder carronades added to QD.

The *Royal Sovereign* Class (Williams design) – dimensions in feet and inches

The *Royal Sovereign* Class (Williams design) – dimensions in feet and inches

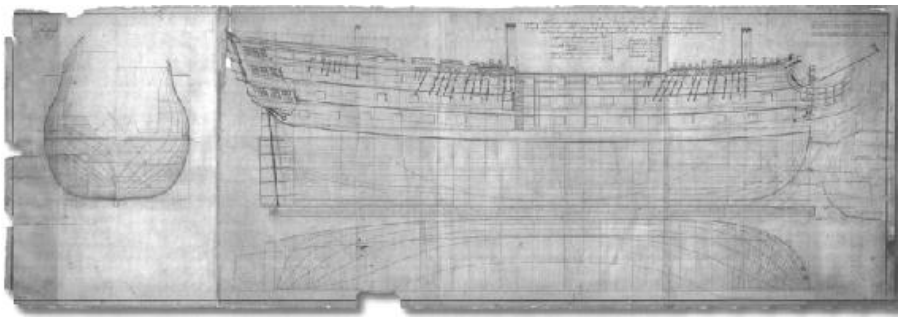
VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Design	186 0	152 6	52 0	22 3	2193 $^{18}/_{94}$
As completed:					
Royal Sovereign	183 10½	150 9⅝	52 1	22 2½	2175 $^{29}/_{94}$

CHAPTER

6

The French Revolutionary War and the expansion of the First Rate

WILLIAM Anderson's oil painting of the Spithead review of the fleet mobilised against Spain over the Nootka Sound crisis in 1790. In the centre of a veritable squadron of three-deckers is Lord Howe's flagship, the newly commissioned *Queen Charlotte*, with her distinctive and highly painted figurehead.
[NMM BHC2260]



THE design draught for the *Royal George* class (it was also used for the *Queen Charlotte* of 1790). Later amendments include a solid barricade for the poop, associated with the installation of carronades on that deck.
[NMM J1722]

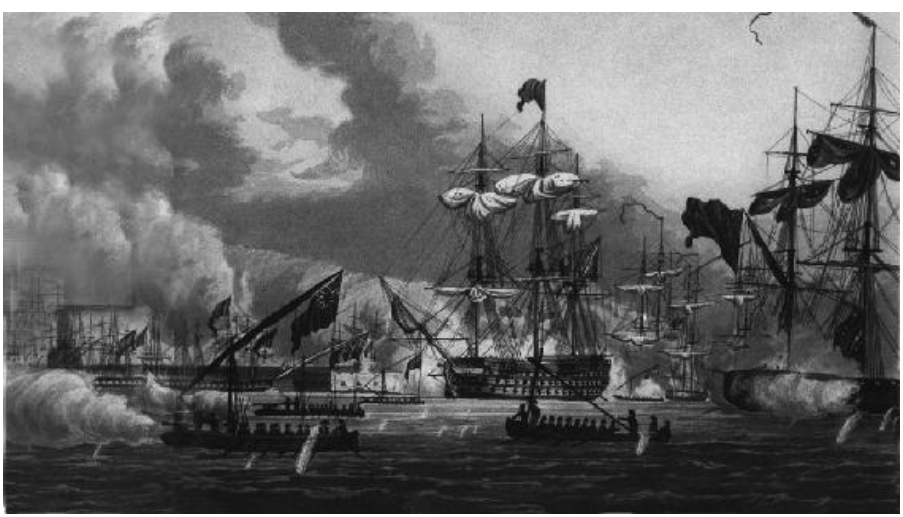
A contemporary 'Dockyard' model of the *Queen Charlotte*, with particularly fine decorative carving, including the ship's unusual figurehead. From the middle of the eighteenth century, the open-frame convention was generally abandoned in favour of a solid or planked lower hull, even in official models.
[NMM B9563]

The arrival of peace in 1782 saw the beginnings of a policy of augmenting the larger ships of the Royal Navy. In spite of Rodney's victory at the Saintes, the American Revolutionary War had witnessed for the first time in a century a successful challenge to British naval dominance, and the French navy had given a good account of itself, which led many in Britain to eye with respect the larger and well-designed capital ships of their main challenger. The Admiralty, of which Keppel became First Lord after the fall of Lord North's administration removed Sandwich from office, rapidly began the

construction of new three-deckers. Two new First Rates were ordered in 1782 and two Second Rates in the following year. Both designs were prepared by Edward Hunt, the former Master Shipwright at Portsmouth who had become Surveyor of the Navy in March 1778.

The first of the new ships was actually ordered in the dying days of Sandwich's Board after Lord North's resignation; initially named *Umpire*, she was renamed *Royal George* on 11 September 1782 following the former *Royal George's* tragic loss a fortnight earlier. After launch, she remained incomplete at Chatham for nineteen months before being taken to Plymouth, where she was fitted for Channel service, completing in July 1790 at a total cost (building plus fitting) of £68,392.6.0d.

The new *Royal George* was first commissioned in May 1790 under Captain Thomas Pringle. She recommissioned in February 1793, following the outbreak of war, under Captain William Dommett, as Alexander Hood's flagship with Howe's fleet. She took part in the Battle of the Glorious First of June (1794) with this flag. On 1795 she hoisted the flag of Lord Bridport, and took part in the action named after the admiral off Île Groix on 23 June 1795. Paid off into Ordinary in April 1802, she underwent a Middling Repair and refit at Plymouth between July 1805 and July 1806. She was recommissioned in June 1806 under Captain Charles Gill, for Channel service. In January 1807 she became the flagship of John Duckworth off Cadiz, with Captain Richard Dunn as her new commander. She was finally laid up at Plymouth in July 1814, and taken to pieces there in February 1822.



THE replacement *Queen Charlotte* of 1810 depicted during the Bombardment of Algiers in 1816 – probably the last time a British First Rate took part in a general action under sail. Here she was the flagship of the expeditionary force commanded

by Admiral Edward Pellew, who was created Viscount Exmouth following this action against the depredations of the Algerine pirates. His squadron also included the Second Rate *Impregnable*, three 74s (*Superb, Minden* and *Albion*), the 50-gun *Leander* and four modern frigates (*Severn, Glasgow, Granicus* and *Hebrus*), together with assorted minor vessels and a Dutch squadron which assisted in the action. [NMM PW4866]

The *Royal George* Class (Hunt design) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Royal George (ex Umpire)	Chatham Dyd	25. 3.1782	6.1784	15. 9.1788	BU 2.1822
Queen Charlotte (i)	Chatham Dyd	12.12.1782	9.1785	15. 4.1790	Blew up by accident 17.3.1800
Queen Charlotte (ii)	Deptford Dyd	9. 7.1801	17. 5.1810		Sold 12.1.1892

The *Royal George* Class mounted thirty 42-pounders (lower deck), twenty-eight 24-pounders (middle deck), thirty 18-pounders (upper deck) and twelve 12-pounders (ten on the quarterdeck, 2 on the forecastle). However the *Royal George* had 12-pounders on the upper deck.

The *Royal George* Class (Hunt design) – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Design	190 0	156 5	52 4	22 4	2278 $^{8}/_{94}$
As completed:					
Royal George	190 0	156 3¾	52 5½	22 4	2286 $^{15}/_{94}$
Queen Charlotte (i)	190 0	156 3⅜	52 5½	22 4	2286 $^{15}/_{94}$
Queen Charlotte (ii)	190 0½	156 2¼	52 5¾	22 4	2288 $^{60}/_{94}$

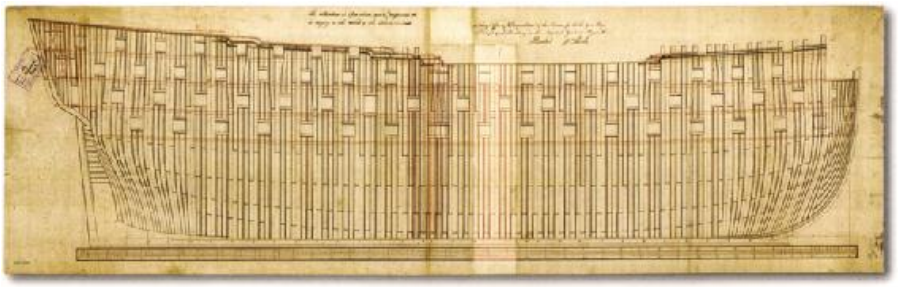
The second ship was approved to be built to the same draught on 12 December 1782 and was named *Queen Charlotte* on 21 January 1783. She completed fitting on 7 June 1790, equipped for a flag officer, at a total cost (building plus fitting) of £66,112.3.8d. Commissioned in May 1790 under Captain Roger Curtis, she flew the flag of Rear-Admiral John Leveson Gower, and also served as the flagship of Admiral Lord Howe for the 'Spanish Armament' – the emergency mobilisation of 1790 in response to the Nootka Sound crisis – before paying off later in the year.

The *Queen Charlotte* was recommissioned in February 1793 by Captain Curtis (who was knighted later that year), still flying Lord Howe's flag; in this role, she took part in the Glorious First of June battle in 1794. She was recommissioned in June 1799 under Captain Andrew Todd, and served as the flagship of Lord Keith's Mediterranean Fleet. Sadly, she was lost in this role (while Keith was ashore) near Leghorn through an accidental fire.

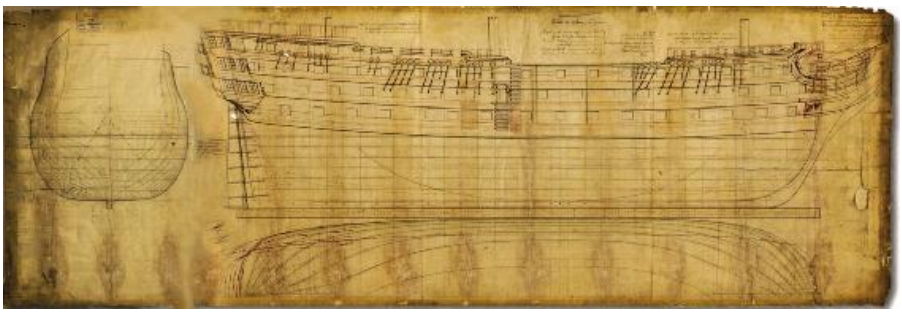
VILLE DE PARIS

A third 100-gun ship to the draught of the *Royal George* was ordered in May 1788, but the new Surveyor of the Navy, John Henslow, prepared and submitted an amended draught for this vessel. With the decision being taken to substitute 32-pounder guns for the 42-pounders on the lower deck, Henslow was able to fit an extra pair of 24-pounder guns and gunports into the middle deck, and an extra pair of 18-pounder guns and gunports into the upper deck, at the expense of barely 8 inches of length being added to this ship. More easily, an additional pair of 12-pounders could be added on the forecastle, and two extra pairs on the quarterdeck, so turning the design into a 110-gun ship. The new design was approved on 5 August. On 26 September the ship was given the name of *Ville de Paris* to commemorate the prize taken in 1782. Ironically, Britain's largest warship to be built in the eighteenth century would thus honour the French capital.

THOMAS Buttersworth's oil painting shows the *Ville de Paris* under full sail about 1801, flying the flag of Admiral William Cornwallis, then commander of the Channel Fleet. The ship has quarter davits, which were a very recent innovation.
[NMM BHC2271]



WHEN it was decided to increase the rating of the *Ville de Paris* from 100 to 110 guns, this was achieved by little more than a rearrangement of the ports and the addition of small guns on the upperworks, but for the next ship the design was 'stretched' to allow an extra port on each gundeck and hence a more rational disposition of firepower. This was achieved by the apparently crude measure of inserting a set of frames amidships – symbolised by physically cutting the framing draught and splicing in a new (and lighter) piece of paper with the additional timbers drawn on. The inspiration for this move was a desire to improve the speed of British warships (waterline length being the single largest element affecting speed), and a development that affected every rate from frigates to three-deckers in the 1790s, as the war at sea turned increasingly into the pursuit of a reluctant enemy.
[NMM J1815]



ORIGINALLY intended to be a third ship of the *Royal George* class, *Ville de Paris* was built to a new 110-gun design, as shown in this draught. It is dated 1788, but is also overlaid with the outline of the later radical alterations to give the ship a round stern and bow.
[NMM J1944]

Construction was entrusted to Nicholas Phillips, the Master Shipwright at Chatham, although the holder of this post would change three times during the construction period. The *Ville de Paris* completed fitting out at Chatham on 17 September 1796 (having cost £78,830 up to that time), and was commissioned the following month under Captain Walter Lock. She was to serve right throughout the war period for the next eighteen years, chiefly as a flagship in either Home waters or in the Mediterranean, but never taking part in any of the major fleet actions of that time.

In December 1790 a further ship was ordered to the Henslow draught of the *Ville de Paris*, to carry 110 guns. She was begun in 1792 at Plymouth, under the direction of Master Shipwright Thomas Pollard, although like the *Ville de Paris* there were to be three changes in the post-holder before the ship was launched. In 1795 the Admiralty was becoming concerned about the speed of French warships, and had concluded that the best way to raise the speed of British equivalents was to increase their length. This principle was applied to both frigates and line of battle ships, including First Rates, and for the new ship the revised design added a mid-section of 11ft 2 in to the previous design – the frames on the stocks at Plymouth had to be physically pulled apart so that this midsection could be inserted. As a consequence an additional pair of gunports and guns could be fitted into each of the three complete decks.

The ordnance on the quarterdeck and forecastle could also be augmented, with 18-pounder long guns replacing the 12-pounders of her predecessors, although the proportion of carronades on these decks was also increased – the ship had eight pairs of gunports on the quarterdeck, and carried four 18-pounders and a dozen 32-pounders carronades here; she had three pairs of gunports on the forecastle, with two 18-pounders and four 32-pounder carronades established. Since six of these carronades were deemed to be carried instead of the long guns that would have been carried before, that number were now included in the ship's established gun rating, which was thus stated as 110 guns. As before, the six 24-pounder carronades carried on the roundhouse roof were not included in the total.

The reconstruction while on the stocks inevitably delayed the ship's completion, and the *Hibernia* was not launched until November 1804, having cost £71,139 to build. She was commissioned that month under Captain Edward Thornbrough, and completed fitting out on 7 March 1805, at the cost of a further £17,661, Admiral Lord (Alan) Gardner raised his flag aboard, as the C-in-C of the Channel Fleet from 3 April Like the *Ville de Paris*, the *Hibernia* was to serve throughout the next ten years as a flagship on various stations, before being paid off into Ordinary at Portsmouth in October 1815.

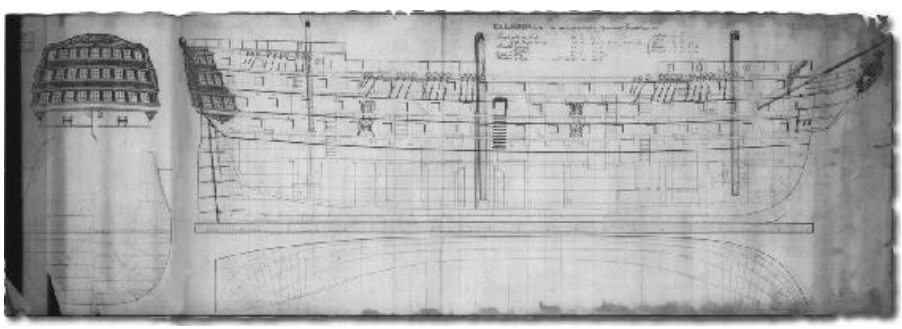
The Growth in Designs 1788 to 1798 – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Ville de Paris	Chatham Dyd	25. 5.1788	7.1789	17. 7.1795	Lazarette 1825; BU 6.1845
Hibernia	Plymouth Dyd	9.12.1790	11.1792	17.11.1804	120-gun ship 1819; base guard- and receiving ship 1855; sold 14.10.1902
Caledonia	Plymouth Dyd	6.11.1794	1.1805	25. 6.1808	BU 1875

The Growth in Designs 1788 to 1798 – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Original design	190 0	156 1⅜	53 0	22 4	2332 $^{31}/_{94}$
As completed:					
Ville de Paris	190 2½	156 1½	53 2½	22 2½	2351 $^{15}/_{94}$
Lengthened design	201 2	167 3⅜	53 0	22 4	2499 $^{15}/_{94}$
As completed:					
Hibernia	201 2	167 6⅜	53 0⅝	22 4	2507 $^{73}/_{94}$
later revised to	202 8¼	167 10½	53 2¼	22 6	2530 $^{8}/_{94}$
Caledonia design	205 0	170 11	53 6	23 2	2602 $^{15}/_{94}$
As constructed:	205 5½	170 4⅜	53 8¼	23 2	2615 $^{66}/_{94}$
later revised to	205 5½	170 4⅜	54 8½	23 2	2711 $^{86}/_{94}$

Note: Caledonia was reconstructed between May 1826 and May 1831 at Plymouth.



A further 100-gun ship was ordered in 1794 to Sir William Rule's design, and *Caledonia* was laid down on the first day of 1805 on the slipway recently vacated by the *Hibernia*. Earlier it had been decided to make her carry 120 guns, and the Surveyor amended his design to this effect. This draught shows the ship as completed, and is notable for the first appearance of the built-up or 'round' bow in a First Rate; even the traditional flat stern is more upright, and she has solid barricades along the upperworks. She was altered in the late 1820s, when she was widened, given a circular stern, and acquired a more uniform ordnance of 32-pounder guns on all three decks. Initially 63cwt guns were supplied for the lower deck, but this weight made her lower gunports too close to the waterline, and in 1831 the Admiralty instructed them to be replaced by ones of 55cwt. At the same time her galley was moved up to the upper deck, and her sick berth moved up to the middle deck.
[NMM J1952]

CALEDONIA

In November 1794 a new First Rate was ordered for the Royal Navy. Although it was at first intended that she should be a 100-gun ship, Rule's design was eventually altered to make her a 120-gun ship, the largest warship yet built for the British, measuring over 2600 tons. Later alterations saw nearly a foot added to her planned breadth, raising her size to over 2700 tons. With the urgent need for smaller battlefleet ships, which could be built quicker, she was not laid down until 1805, and was finally launched in June 1808. The *Caledonia*, as she was named, was an immediate success, widely regarded as the finest First Rate so far built. Most subsequent First Rates followed her design, and its essentials were to be maintained for almost the whole of the remaining sailing era.

Having looked at the way in which the basic concept of the First Rate (and its ordnance) was expanded over the last decade of the eighteenth century, we now need to retrace our steps a little to the start of that decade, and look at other events during that period, particularly the consequences of the fresh war which broke out in 1793. In early 1790 there were five First Rates, each of 100 guns, including the *Queen Charlotte*, lying finished on the stocks but not yet launched. Each had a complement of 850, which was reduced to 837 from 16 April 1794; eight carronades were added to the Establishment from 19 November 1794 – two 32-pounders (on the forecastle) and six 24-pounders (on the roundhouse). Under construction was a larger three-decker of 112 guns (still with 837 men), while even larger First Rates of 120 guns (and 865 men) were to be built by 1815. The remaining 42-pounders on some vessels' gundecks began to be replaced by 32-pounders from 1790, although the process continued beyond the turn of the century.

The nominal strength of the Royal Navy was increased by three First Rates captured from the enemy during this time: the *Commerce de Marseille*, a French 120-gun ship brought away from Toulon in 1793; and two Spanish 112-gun ships captured off Cape St Vincent on 14 February 1797, the *Salvador del Mundo* and the *San Josef* (retaining their names). Only the last proved of any real value as a fighting unit, but the *Salvador del Mundo* was commissioned for a short period of sea service (see Chapter 11 for details).

On the other side of the balance sheet, the Royal Navy suffered its most grievous loss of the French Revolutionary War on 17 March 1800 when the *Queen Charlotte*, Lord Keith's flagship in the Mediterranean, caught fire by accident and eventually blew up off Leghorn. The fire started aft around 6am and burnt for several hours before it became obvious that she was unsaveable. Major efforts by her consorts to save men as they abandoned ship were hampered by the fear of explosion, and some 690 were lost, including her commander, Captain Andrew

Todd (Admiral Keith was ashore at the time).

A replacement to the same Hunt design (and repeating the same name) was ordered by Earl Saint Vincent's incoming Board in July 1801, although the keel for the new ship was not laid down until October 1805 since priority was being given to ships which could be brought into service quickly. She differed little from her predecessor, except to mount a more extensive carronade establishment – fourteen 32-pounder carronades disposed two to the forecastle and twelve on the quarterdeck (reducing the long 12-pounder guns to a single pair of chase guns in each location), and six 18-pounder carronades on the roundhouse deck.

Although not launched until May 1810, the second *Queen Charlotte* was to have a long career. Following the Napoleonic War, she was re-rated as a 108-gun ship from February 1817. Eventually she was renamed *Excellent* (on 31 December 1859) as a gunnery training hulk, and was not sold to be broken up until January 1892.

THE SURVEYORS' JOINT DESIGNS

Before the qualities of the new *Caledonia* could be tested, however, the Admiralty was faced with the issue of how the future of its ships of the line was to develop. An order for a fresh First Rate of 120 guns was placed in November 1805, immediately following the news of the victory at Cape Trafalgar; two more First Rates were ordered in January 1806. The question then to be considered was how to develop an appropriate design for these three, as well as for smaller ships of the line. Following what had become a common practice since the introduction of joint Surveyors, the Admiralty instructed each of the two Surveyors in August 1806 to prepare new designs for First, Second and Third Rates. The individual plans for Third Rates were produced first, but the Admiralty saw merits in both proposed draughts and instructed the Surveyors to work together on a common design, at which point the Surveyors suggested that they should similarly collaborate on common plans for First and Second Rates.

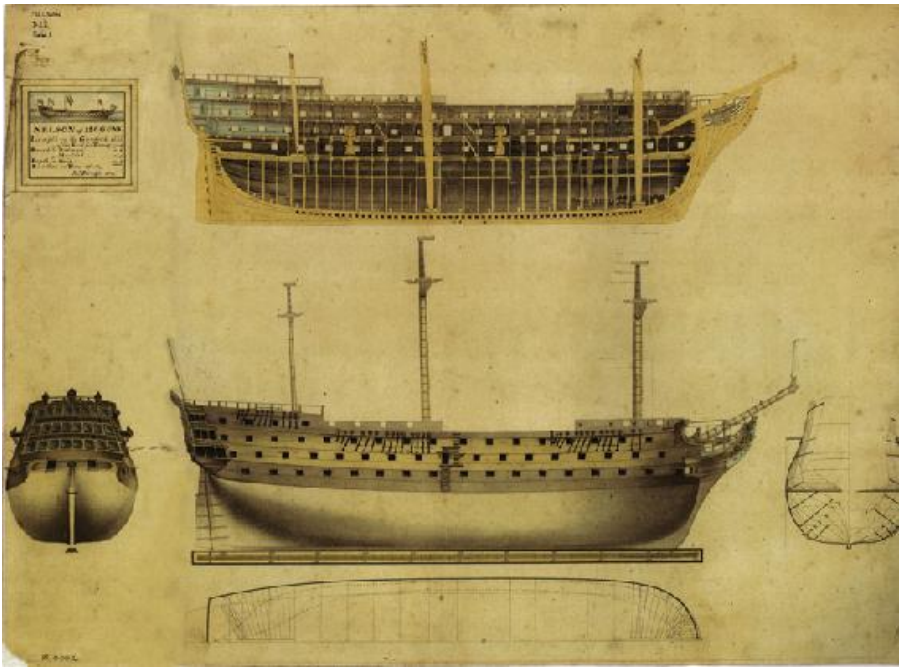
The *Nelson* Class (Surveyors' joint design) – construction history

VESSEL	BUILDER	ORDERED	LAID DOWN	LAUNCHED	FATE
Nelson	Woolwich Dyd	23.11.1805	12.1809	4. 7.1814	Sold 28.4.1898.
Saint Vincent	Plymouth Dyd	15. 1.1806	5.1810	11. 3.1815	Sold 17.5.1906.
Howe	Chatham Dyd	15. 1.1806	6.1808	28. 3.1815	BU 2.1854.

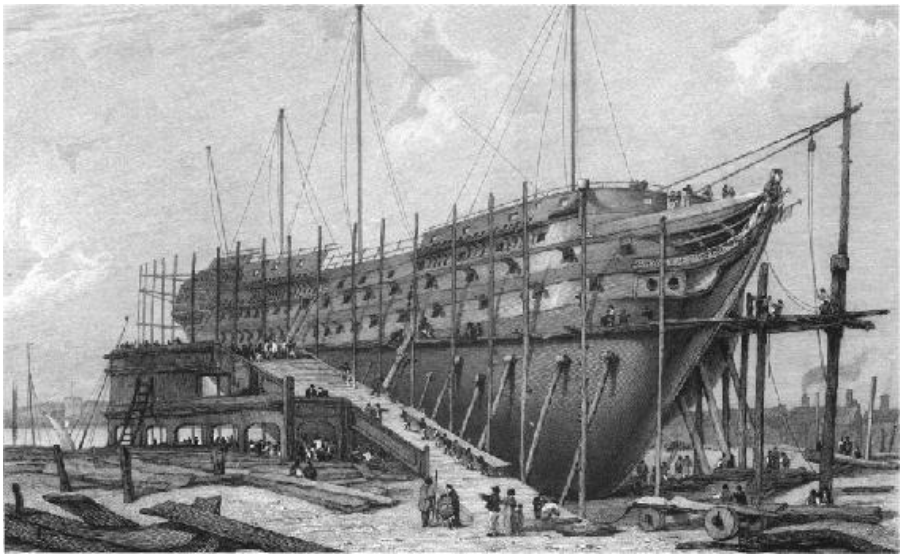
The *Nelson* Class (Surveyors' joint design) – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BEAM*	DEPTH	TONS
Nelson class design	205 0	170 1 5/8	53 6	24 0	2601 94/94
– as completed:					
Nelson	205 0 3/4	170 10	53 8	24 0	2617 11/94
Saint Vincent	204 11	170 6 1/4	53 8	24 0	2612 78/94
Howe	205 0	170 7	53 8 1/4	24 0	2619 85/94

* the moulded beam was 6 inches less



THIS small-scale pictorial plan of the *Nelson* is one of a series by the artist James Pringle showing typical vessels of the post-Napoleonic Royal Navy. Depicting both the exterior and interior, it reveals more detail than the standard Admiralty draught, including the lower masts. The Surveyors' design produced a workaday ship, but like many products of a committee it was not outstanding.
[NMM J8589]



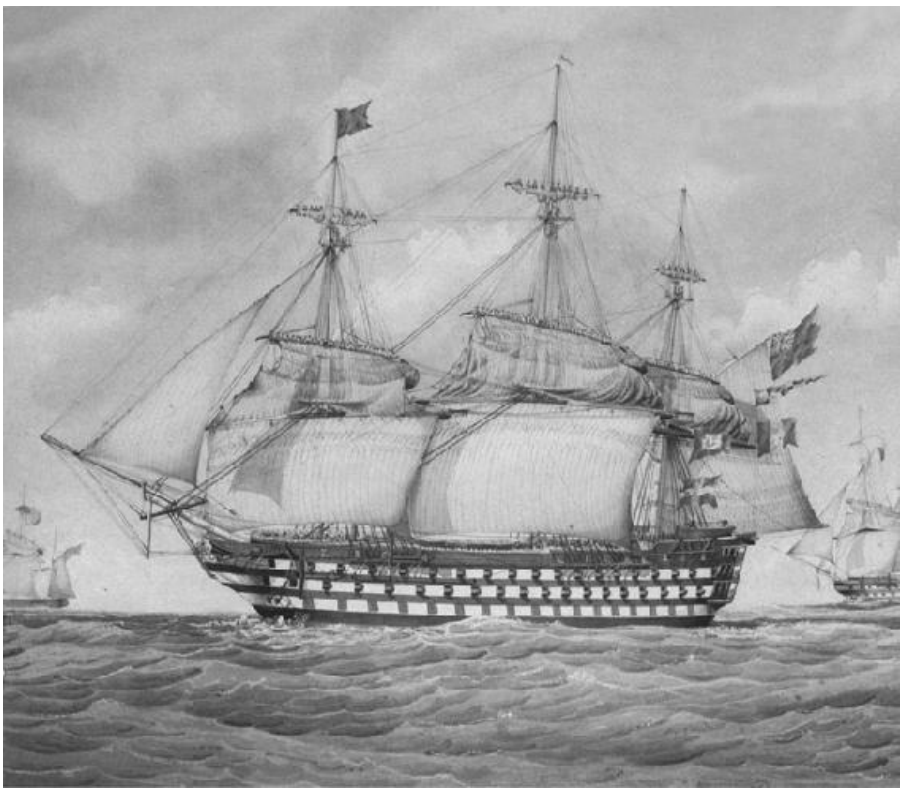
THIS illustration of the *Nelson* under construction at Woolwich can be dated to early 1814, as the ship is virtually ready for launching. Early First Rates tended to be built in dry-dock and floated out when completed, but by this time shipwrights had sufficient confidence, born of experience, to launch even the largest ships from a slipway. The configuration of the bow is not clear, but it looks like the artist is trying to depict the new round bow, as opposed to a flat beakhead bulkhead as shown on the building draught. Temporary light masts are in place to carry flags and banners during the launching ceremony; these will be removed afterwards and the heavy lower masts will be stepped in their place with the assistance of Woolwich's sheer hulk, the former 50-gun *Preston*.
[NMM PU6093]

The Surveyors' joint plan for a 74-gun Third Rate was to produce the numerous ships of the *Armada* (or 'Surveyors of the Navy') Class, often referred to as the 'Forty Thieves' because of the unexpected costs and problems associated with their building. The Surveyors also developed a common design for a 120-gun First Rate, of which the first ship was to be named after the new British 'God of War', the recently killed Horatio Nelson. And finally they came up with a 98-gun Second Rate, to which design a single ship was ordered in June 1807, named the *Trafalgar* after the hero's greatest victory.

Various other improvements were made around this time. Like the *Caledonia*, the *Nelson* class had a built-up 'round' bow without a beakhead bulkhead, which gave more structural strength forward, as well as providing more space for the guns on the upper deck and forecastle. Aft, the square stern was retained, with the traditional quarter galleries, but without the protruding sternwalks. The barricades along both quarterdeck and forecastle were now 'berthed up' (solid), to give added protection to the gun crews on these decks. But like all compromises, the joint designs were not outstanding.

Whereas the new *Caledonia* when she appeared was generally described as 'flawless', unfortunately the *Nelson* and her two sisters were found to be less meritorious. It was decided that any future orders for 120-gun ships should follow the *Caledonia* draught, and no further units to the Surveyor's draught for the *Nelson* were to be ordered.

The single Second Rate under this programme – the *Trafalgar* – was ordered in 1807 from Chatham Dockyard, but not laid down until 1813 and launched in 1820, after being re-classed as a First Rate of 106 guns in 1817. Renamed *Camperdown* in February 1825, she does not feature in this volume.



HIBERNLA enjoyed a long career and is depicted here by the seaman artist Lieutenant Humphrey J Julian, who was the ship's first lieutenant during her 1845 commission as flagship of the Mediterranean Fleet. The ship shows the circular stern fitted during her reconstruction of 1819–1825. She was to survive in various reduced capacities until broken up in 1902.
[NMM PW5999]

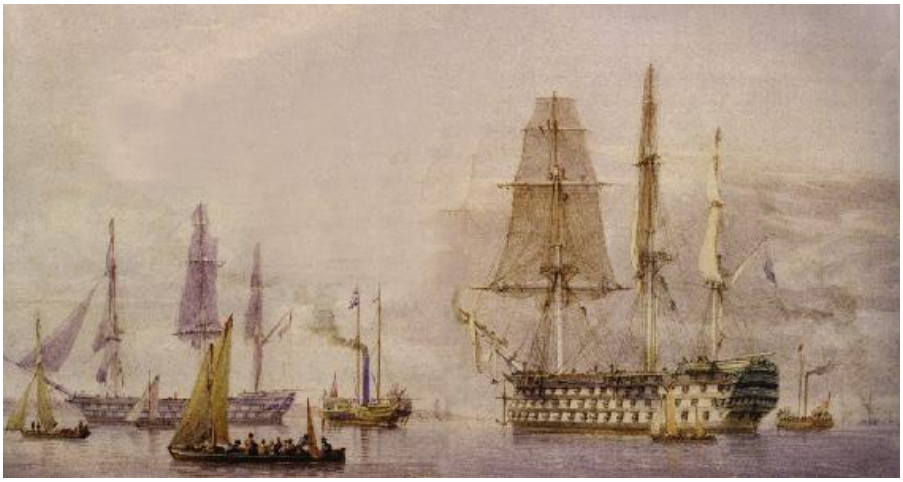
The initial armament for these three ships was established as sixteen pairs of 32-pounders on the lower deck, seventeen pairs of 24-

pounders on the middle deck, and seventeen pairs of 18-pounders on the upper deck. To make up the total of 120 guns, each had six 12-pounders and ten 32-pounder carronades on the quarterdeck, and another two 12-pounders and two 32-pounder carronades on the forecastle. There were additionally (and uncounted in the established total) six 18-pounder carronades on the roundhouse. The *Saint Vincent* and *Howe* were subsequently refitted with short 32-pounders of reduced weights replacing the 24-pounders and 18-pounders on the middle and upper decks (but with a pair of 68-pounder carronades supplanting one pair of long guns on each of the three full decks); the six 12-pounders and six of the carronades on the quarterdeck were replaced by twelve 18-pounders, and another pair of 18-pounders replaced the 12-pounders on the forecastle.

Nelson

All three ships were completed to the launching stage by the early summer of 1814. Although launched first (at a cost of £123,469), the *Nelson* saw no active service at all. Six weeks after her launch, on 17 August 1814 she was sailed round from Woolwich to Portsmouth under the command of under Captain Thomas Burton to complete her fitting out, but she was then promptly laid up and housed over fore and aft, and her hull doubled for protection. She underwent a Very Large Repair at Portsmouth between October 1825 and September 1828 (at a cost of £86,512), the doubling was removed in September 1837, and she was converted to an Advanced Ship (this concept is explained in the following chapter) between April and June 1846 (at the cost of a further £15,267), but at no time was she brought into service. She remained at Portsmouth until 1858, when she became the oldest 120-gun ship to be converted to steam, and the only ship launched before the end of the Napoleonic era to be so converted. On 5 February 1859 it was instructed that she was to be cut down a deck at Portsmouth into a 90-gun Second Rate, with a 500nhp Ravenhill horizontal trunk engine and screw fitted.

The *Nelson* was taken in hand on 10 March, and the rebuilding work was completed on 7 February 1860. The new engine was fitted in September 1860, and the ship joined the Second Division of the Steam Reserve, still uncommissioned. In February she was transferred to the Government of the (Australian) colony of Victoria, to be used as a training ship, and she continued in that role for some thirty years. The *Nelson* was then sold as a stores hulk on 28 April 1898, being finally taken to pieces at Launceston in September 1928.



A watercolour by William Joy of the *Saint Vincent* as she appeared in later life. She was reduced to 102 guns in 1850 and served as a troopship during the Russian War, to which period this image can be dated.
[NMM PAF6090]

Saint Vincent

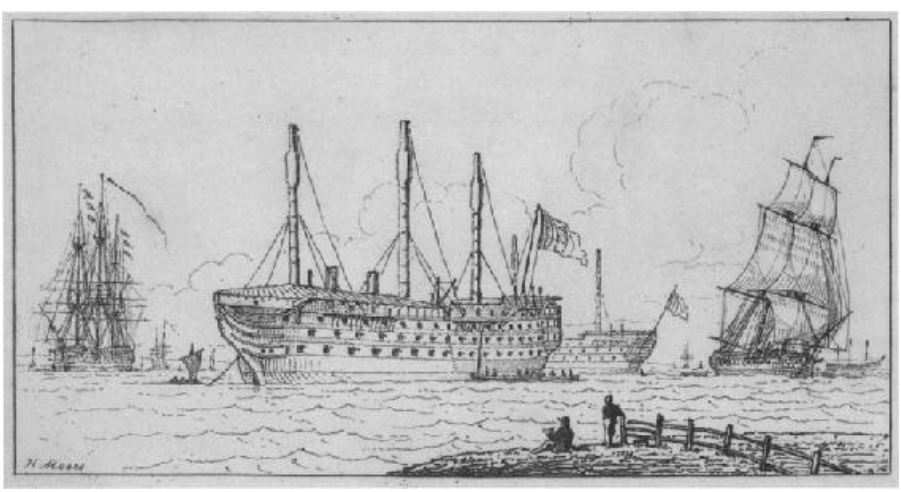
Both her sister-ships were to predecease the *Nelson*, neither being considered suitable for conversion to steam. The *Saint Vincent* was ready for launch at Plymouth by June 1814, but was left on the slip to allow her timber to season until March 1815. Built at a cost of £110,549, she was put into Ordinary straight away and remained there, apart from a Very Small Repair carried out (at a cost of £14,256) between June and October 1823, until 1829. She was then fitted as a Guard Ship (for £25,818) between September 1829 and May 1830, while under the command of Captain Edward Hawker as the flagship of Lord Northesk. On completion of this work, she was moved to Portsmouth, to become Hyde Parker's flagship. Humphrey Senhouse took over as captain on 25 February 1831, and the *Saint Vincent* became the flagship of the Mediterranean Fleet for the next three years (stationed at Lisbon from end 1832 until 1833). She was paid off in March 1834 at Portsmouth, and began a refit between May and July 1834 (at the cost of £3252) for a fresh commission, but this refit was then cancelled and the ship remained laid up. The *Saint Vincent* was taken in hand in July 1839 for a Small Repair and was then fitted as a Demonstration Ship and a flagship for £41,016), the work continuing until August 1843. She was brought back into commission on 1 October 1841, becoming the flagship of Sir Edward Codrington at Portsmouth. She stayed in that role until the end of 1848, paying off in June 1849.

Between April 1849 and December 1851 the *Saint Vincent* underwent another Very Small Repair and was fitted as an Advanced

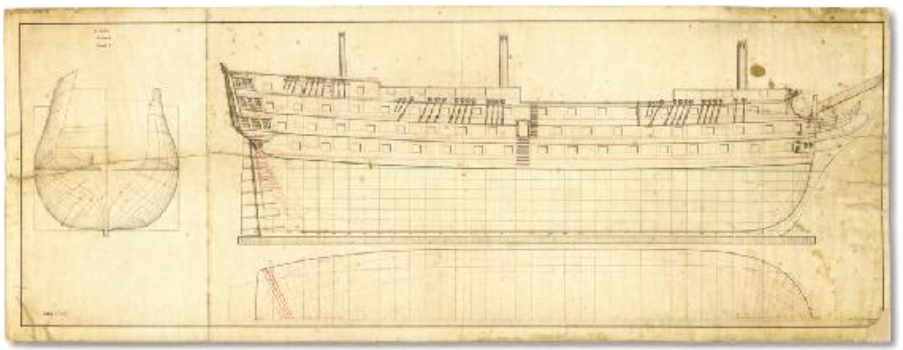
Ship (for £17,528). She remained in Ordinary until November 1853, when she recommissioned as the flagship of Rear-Admiral William Fanshawe Martin, and was fitted as a Guard Ship in March/April 1854 (at the cost of £8576). Under Martin's flag, she remained a flagship until 1856, briefly deploying to the Baltic Sea (transporting French troops thither) during the Russian War. In February 1858 she was Rear-Admiral George Grey's flagship at Portsmouth, serving also as a depot ship for Reserves. At the start of 1862 the *Saint Vincent* became a training ship for boy entrants, an activity that was to last until the following century. She was finally sold to the shipbreaking firm of Castle on the Thames on 17 May 1906.

Howe

Like the *Saint Vincent*, the *Howe* was completed at Chatham by May 1814 but was left on the slip to season until the following March. Built at a cost of £98,105, she was sailed round to Sheerness on 24 May 1815 and left in Ordinary. She remained there for twenty years, although some defects were made good there between September 1823 and April 1824 (at a cost of £10,520) and partial repairs took place at Chatham between October 1832 and July 1833 (a cost of £5142). The *Howe* was then fitted out as a flagship between July 1835 and July 1836 (for £10,109) and commissioned on 27 August 1835 under Captain Alexander Ellice, as the flagship of Sir Robert Otway. She was based at the Nore for the next five years, paying off about September 1840. She underwent another refit at Sheerness between August and October 1840 (for £5603), and recommissioned on 1 October as the flagship of Sir Watkin Pell, departing to take station in the Mediterranean for a three-year stint. Coming home to Sheerness in July 1843, she paid off and was converted to an Advanced Ship between October and January 1844 (at a cost of £4749).



MANY of the later First Rates were to spend most of their lives out of commission, but forming a very credible strategic deterrent. For this deterrent to be effective, the ships had to be kept serviceable, and to this end considerable effort, ingenuity and resources were committed. This drawing of the *Howe* by Henry Moses shows her laid up in Ordinary in the Medway, roofed over forwards and aft to protect her from the weather and with just her lower masts in place. Ships so treated could be kept in good condition and, when required, fitted for service in little more time than it took to raise the crews.
[NMM PU7924]



THE sheer draught of the *Howe* drawn around 1811. The ship displays the squared-off solid barricades of the carronade age and a rather upright stern, but just predated the radical innovations Seppings was about to introduce. The design was more 'wall-sided' than the *Caledonia,* as tumblehome is much reduced, and the sheer was also slightly flattened, with the intention of raising gunport freeboard amidships.
[NMM J1900]

The *Howe* emerged in 1843, being fitted for sea again between March and May (for £16,044), commissioning under Sir James Stirling on 28 April 1847 and proceeding to Portsmouth. Here she was requisitioned in September of the same year for 'particular service', being fitted in October to convey the Queen Dowager to Madeira (a cost of £5042). From there she proceeded to the Mediterranean, where she remained from June 1848 until July 1850. Returning to Sheerness, she passed into Ordinary until she completed being taken to pieces there on 23 February 1854.

The Surveyor's class was not the largest design of First Rate contemplated by the Admiralty. At the battles of Saint Vincent and Trafalgar, the British Navy had faced Spain's most famous sailing warship, the *Santissima Trinidad*, which started life as a 112-gun three-decker, designed and built at Havana in 1769 by Mateo Mullán (the Irish-born shipwright Matthew Mullan), with the same armament as subsequent ships of that rating. During the mid-1790s she had been taken in hand (possibly a proper rebuilding) with barricades being built along the gangways which joined quarterdeck to forecastle; with

gunports cut into these barricades, and the space between them fitted with a complete structural deck to bear additional 8-pounders (to make a complete battery of thirty-two weapons of this calibre on what now amounted to a complete fourth gundeck. Four smaller guns were added to the roundhouse deck to give her a complete establishment of 130 guns. She was thus technically a flush four-decker, the only ship of that kind ever completed.

Despite her proven deficiencies, the sheer firepower of Spain's mammoth 130-gun ship was not lost on the British, and various plans evolved to produce an equivalent. None was to materialise, but a notable candidate was the design prepared by Plymouth's Master Shipwright Joseph Tucker in 1809 for a four-decker which was provisionally named the *Duke of Kent*. This monster was never ordered because it was felt that the cost of running her would not justify the tactical gain she could provide; but she would have carried 170 guns on a hull which measured 221 feet along the gundeck and 62 feet 5 inches in breadth.

With the latest First Rates increasing in firepower, the older concept of the First Rate with 'only' 100 guns seemed weak in comparison. Even Second Rates began to approach that threshhold, as in 1801 two three-deckers (the *Boyne* and *Union*) had been ordered to the exact hull form of the *Victory*. Even larger three-deckers to designs by Sir William Rule were also built (the *Impregnable* and *Trafalgar*). An enlarged version of the *Victory* design was even produced, to which two ships would be ordered in 1812 (*Princess Charlotte* and *Royal Adelaide*). However all six ships were carefully classed as 98-gun, and thus remained within the Second Rate category, although in the reorganisation of the Rates which took place in February 1817 all serviceable three-deckers (including some surviving older 98-gun ships) would end up being re-graded as First Rates.

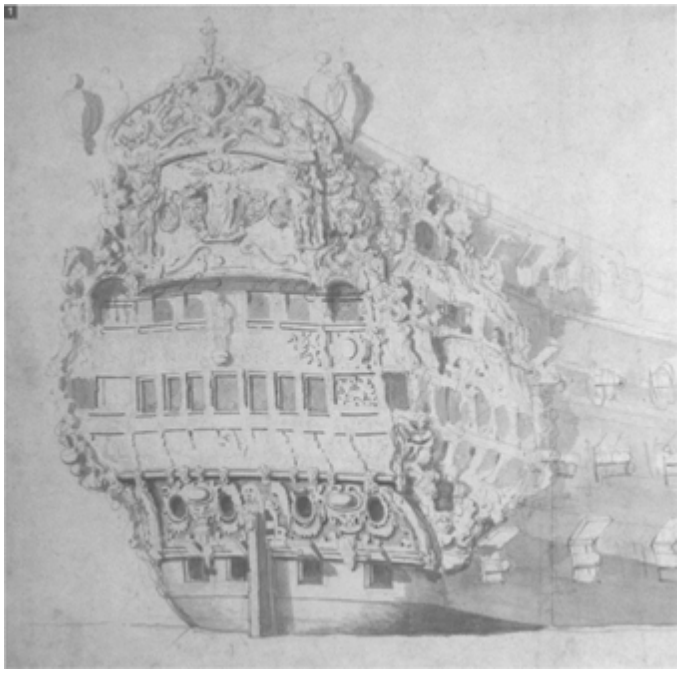
The Changing Shape of the Stern

During the first half of the seventeenth century, English shipwrightry adopted the 'round tuck' stern in place of the old flat transom stern that had been the norm for the galleon era. With the 'square tuck', the after part of the hull terminated in a transverse panel, which had allowed stern-chase guns to be mounted close to the waterline, so providing better low-level defence especially against galleys. The new round tuck stern was formed by curved planking rounding in to the sternpost at the waterline, allowing a smoother flow of water to the rudder, which improved handling. Another consequence was that the rudder-head could now be taken up through the counter, with a

canvas jacket (or rudder-coat) over it to keep out water in rough weather, and was thus inside the ship instead of outside so that the tiller was entirely inboard and less vulnerable in battle. It was to be a distinguishing feature of English warships for the rest of the century, as most other navies retained the flat tuck. The *Prince Royal* and *Sovereign of the Seas* were originally built with the old type of flat tuck, but from 1650 onwards new ships all incorporated the round tuck, and the two ships named were modified with round tucks when rebuilt in this period. The drawing of the rebuilt *Sovereign* as around 1660 shows that ports could still be mounted in a round tuck stern, while the Kriegstein model of the *Royal James* of 1671 reveals how the round shape was framed; in this case the gunports are in the flat of the transom, above the tuck proper.

During the eighteenth century there was a noticeable increase in the breadth of the stern, and in the complexity of its framing. Open galleries at the stern had been introduced in the 1670s, and initially took the form of jutting balconies in imitation of French models, but later the open area was often kept within the depth of the gallery or with minimal projection, as seen in the Annapolis model of the 1719 *Royal William* . These galleries were at the levels of the upper deck and quarterdeck, but not on the middle deck, although there was a row of lights (windows) at this level, and occasionally also a fourth tier on the poop. The *Victory* of 1737, shown in this model painting , was unique in having not only four rows of lights but three galleries as well. Originally these stern galleries continued around to the ship's quarters but during the first quarter of the eighteenth century the quarter galleries were shut off from the stern gallery by a door. Above the transom, the structure of the stern was very light, partly to save weight, but largely because it was difficult to combine strength with the expectations of senior officers regarding their living standards.

The worst excesses of height, however, were curbed by the mid-century and when the next *Victory* was designed in 1758 there was no structure above the poop However, although popular with flag officers, open galleries made the ship vulnerable to bad weather and a following sea, and the battle-hardened officers of the Nelson era accepted the superiority of closed sterns – the model of *Victory*'s stern after her Large Repair of 1800–1803 demonstrates the new appearance.



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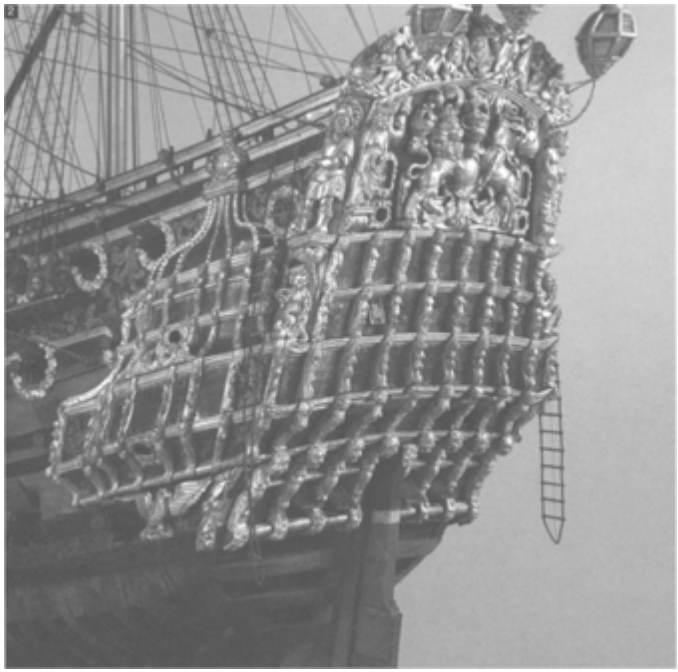


KRIEGSTEIN COLLECTION

US NAVAL ACADEMY MUSEUM, ANNAPOLIS

KRIEGSTEIN COLLECTION

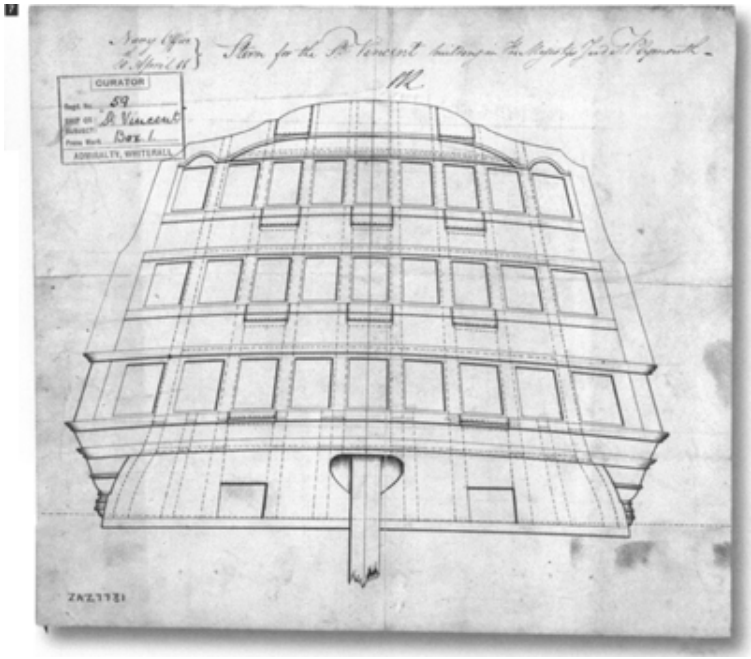
NMM F5808-3

NMM F2881-2

The closed stern did at least allow more guns to be directed aft, and this 1811 draught for the *Saint Vincent* demonstrates how twelve chase pieces could be contrived at five levels by cutting gunport sills into the frames of two or three lights of each tier of stern lights, plus those in the counter and firing over the taffrail. However, the dashed lines of the stern frames underline how feeble the glass and cabinetwork of the stern was in comparison with the thick oak broadside of the ship, which made the tactic of raking from astern so devastating in battle – a ship crossing the stern could fire a rolling broadside down the length of the target vessel, a ploy used so successfully at Trafalgar that it must have provoked some 'blue sky thinking'.

The solution – like so many of the structural advances of the last generation of wooden warships – was the brainchild of the Surveyor, Sir Robert Seppings, who introduced a new form he called the circular stern. More substantial framing was carried round the after end of the ship, and with some of the lights doubling as gunports, it allowed an all-round field of fire, including the previously 'dead arcs' on the quarters. The open galleries of light ironwork were now entirely outside the ship's main structure, and were accessed through doors in the stern which also served as gunports in action. To demonstrate its advantages (and those of his diagonal bracing system), Seppings commissioned a model that was divided down the centreline, showing the traditional form in the starboard half and his innovations to port. The advantage was not only that the ship became structurally stronger, but that this also enabled the guns towards the stern 'to be run out so far as to prevent accidents to the stern by their explosion'. The Navy Board made the new design mandatory from June 1817.

Practical as it was, the stern was ugly to a traditionalist eye, and various shipwrights worked on schemes to combine the strength of Seppings' concept with a more conventional appearance. The model demonstrates the 1819 proposal of the Master Shipwright at Plymouth, Thomas Roberts, that was adopted as the so-called 'elliptical stern'; note the unglazed lights, each of which formed a gunport. With minor variations, this was the preferred style of stern for the rest of the sailing era. It pleased the navy's conservatives because it could be decorated in a familiar style while retaining all-round arcs of fire – sections of the quarter galleries (shown in dashed lines, marked a and b) were removable to form gunports in action; and if flag officers demanded balconies, the light iron structures pioneered by Seppings could be added outboard of the stern structure (*Queen* draught on page 105).



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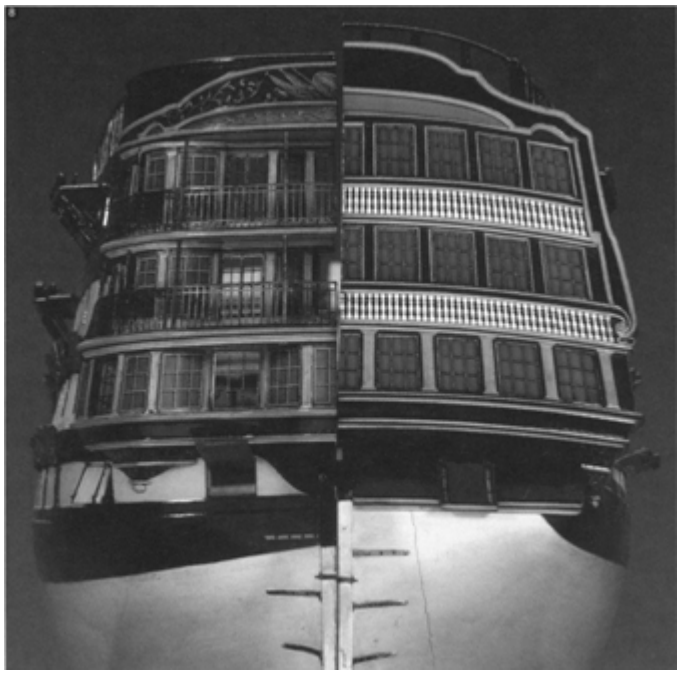

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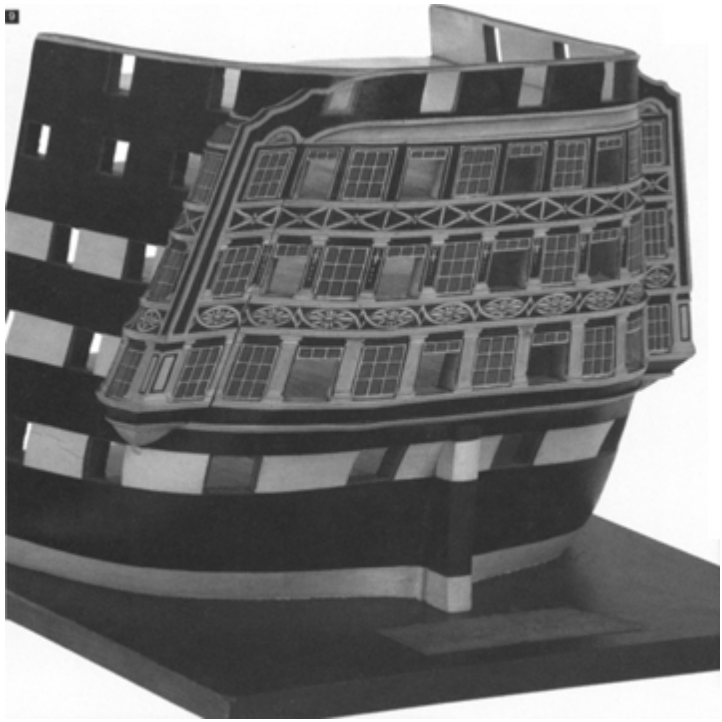

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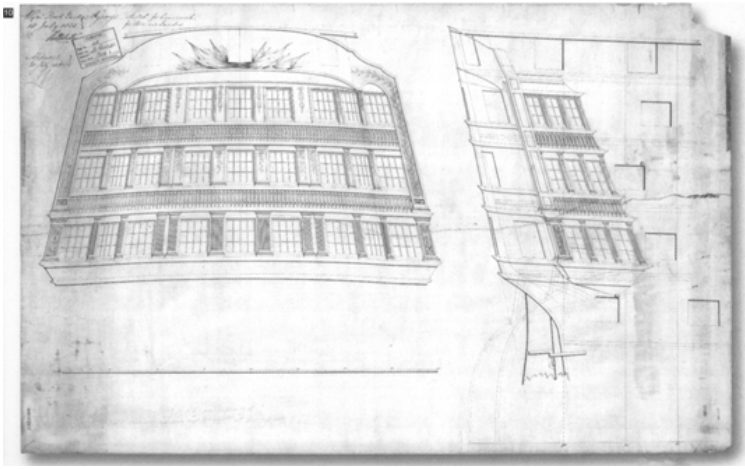

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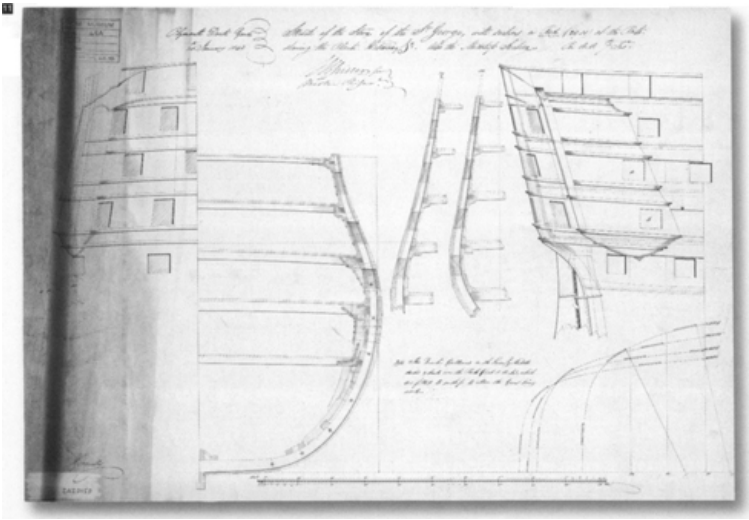
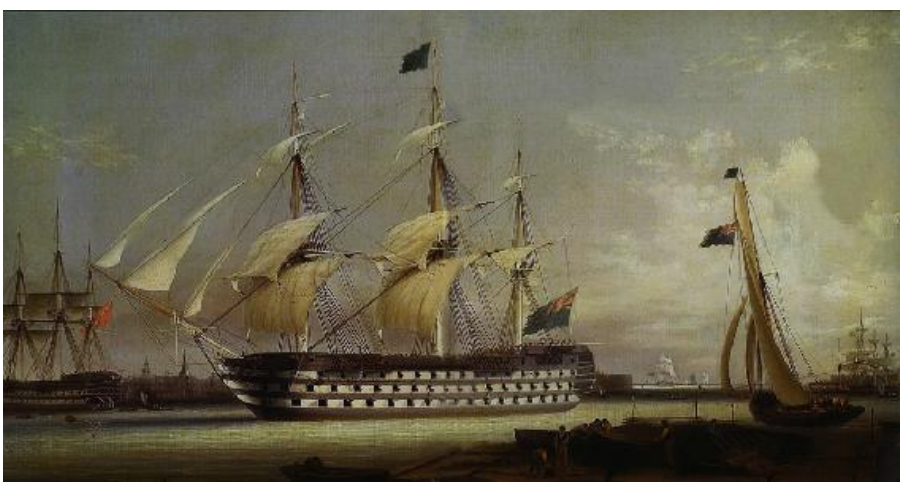


NMM J1728

CHAPTER

7

The Caledonia's Descendants, 1812 to 1840



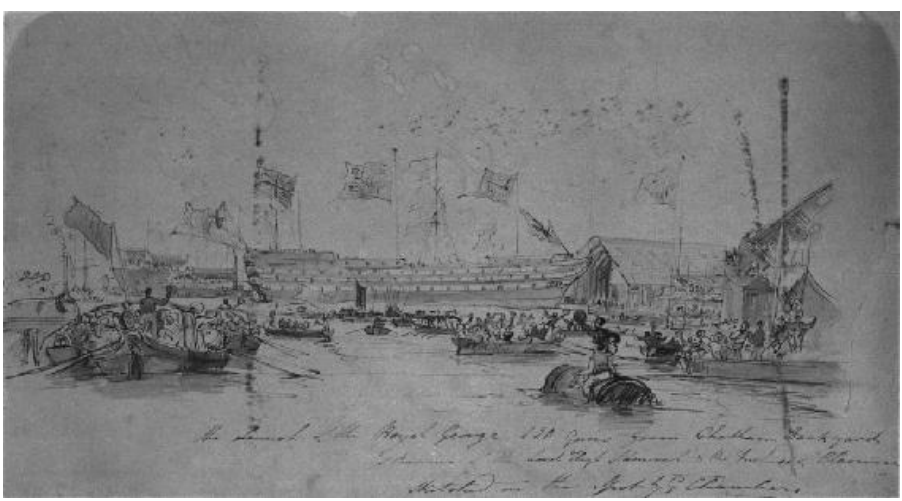
THE *Britannia* entering Portsmouth harbour, as shown by the seaman's eye of Lieutenant Robert Strickland Thomas in an oil of 1836. The artist was a former naval officer, having joined the navy as a seaman 18 days after the Battle of Trafalgar and being promoted through the ranks to be commissioned as a lieutenant, but lost his hearing while serving off Africa in 1814 and was not subsequently employed. The *Britannia* shows a 'round' bow but the traditional flat stern, and is painted in the standard Victorian black and white livery with the gunport stripes carried out to the stem, in most respects representing the last generation of the traditional First Rate before Seppings' innovations radically changed their structure and appearance.
[NMM BHC3745]

Following the Battle of Trafalgar, the Napoleonic regime had belatedly chosen to rebuild its battlefleet with the aim of challenging British dominance of the sea. This strategy would not prevail in the time available, but in laying down or ordering fifteen 118-gun three-deckers in a period of six years, France gave notice that it was moving

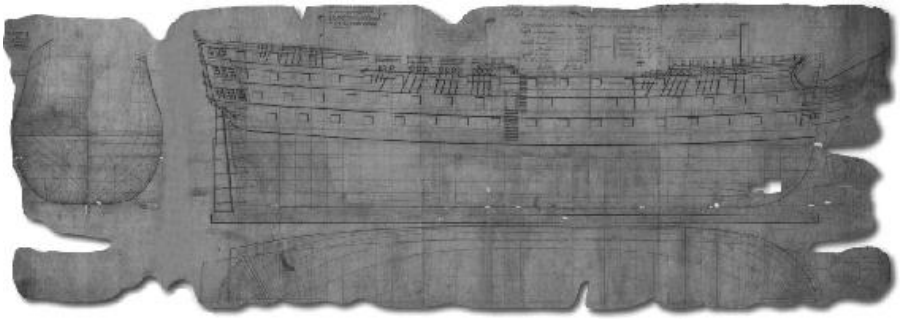
to contest the Royal Navy's battlefleet supremacy.

Faced with this challenge, the British Admiralty recognised that in one area at least they needed to make a radical improvement: impressive though they were as gun platforms, the sailing qualities of most of their three-deckers were deficient, and many British admirals commanding detached squadrons chose to fly their flag in large, fast two-decker 80s rather than the ponderous three-deckers. Almost the sole exception among British First Rates to this dissatisfaction was the new *Caledonia* which, as the first ship designed from the start to carry 120 guns, combined maximum firepower with superb sailing qualities. To British naval officers she was the ultimate battlefleet vessel, and unsurprisingly the Admiralty decided to make her the model for all future three-deckers rather than the relatively unsatisfactory Surveyors' class.

Coupled with this was a recognition that in future fleet actions firepower would be at a premium. The three-decker, with its enhanced weight of broadside and the extra height of its upper deck battery above the waterline, increasingly offered a better option than even the best of the two-deckers. The expansion of the two-decker had also been perceived to have reached the limits of structural integrity within the restrictions of contemporary technology. Thus instead of simply being the flagship of the battlefleet, the First Rate was to form a significant proportion of the battle line.



THE marine artist George Chambers made this rapid sketch on the spot at the launch of the *Royal George* on 22 September 1827 at Chatham. By its very nature it lacks detail, but conveys well the excitement of a First Rate's launch – in this case enhanced by the royal presence of the Duke of Clarence, later William IV but at this time the Lord High Admiral. Note that the slips are now covered by roofs that can still be seen in the preserved area of Chatham Historic Dockyard.
[NMM PW5601]



THIS somewhat battered draught of the *Britannia* class (1820) shows a less pronounced sheer: the deck line was flattened by raising it in the centre of the ship to give more freeboard (distance from the waterline) to the lower sills of the gunports on the lower deck. The stern profile is also more upright. Later developments, like the built-up bow and berthed-up barricades with square hances, are annotated over the original drawing.
[NMM J1956]

Naturally, this meant that the number of First Rates had to be significantly expanded. The new Board of Admiralty under Viscount Melville which took office in March 1812 found that two new First Rates (to be named *Britannia* and *Prince Regent*) and two new Second Rate three-deckers had been ordered on 6 January of that year, together with six 74-gun Third Rates and a couple of smaller vessels.

Although the war against Napoleon still had more than two years to run, the naval struggle was clearly at a stage of blockade, convoys and small ship actions rather than set-piece fleet engagements, and thoughts were already turning to the post-war scene. With the need to return to peacetime levels of defence expenditure, the new administration would have to think in terms of retrenchment; and while frigates and lesser warships would continue to be ordered, few additional battlefleet units would be required.

The planned reduction of the battlefleet to peacetime levels, which began with the cessation of warfare in 1814, was interrupted briefly by Napoleon's return to power for what became known as the Hundred Days. On 30 March the Admiralty issued an order for four First Rates (the *Royal Sovereign, San Josef, Ville de Paris* and *Queen Charlotte*) to be fitted for service.

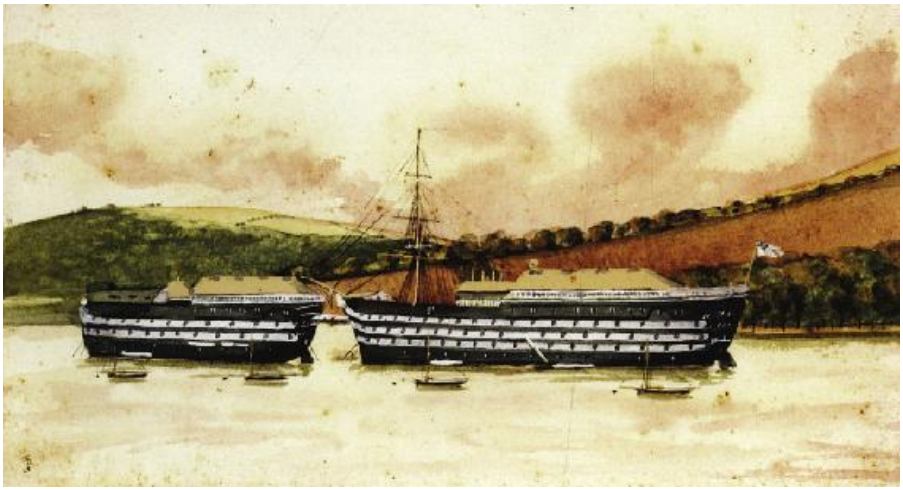
The 1812 order for the new *Britannia* at Plymouth was intended from the start as a follow-on to that dockyard's highly successful *Caledonia*, but the order for the *Prince Regent* was not immediately allocated, the instruction not being sent to Chatham until 1814. At this time the Admiralty intended this First Rate to be a 100-gun vessel similar to the *Royal George* design of 1782 (the *Queen Charlotte* was mentioned as a model), but the Surveyor pointed out that this design

was now obsolescent, and asked for a 120-gun ship instead. He proposed a fourth ship to the Surveyors' (*Nelson* class) design, but by now the Admiralty had already endorsed the *Caledonia* as the model for future 120-gun ships, so the order for the *Prince Regent* was altered accordingly. The decision was further cemented by the appointment of Rear-Admiral Sir Thomas Byam Martin as the new Controller of the Navy; he accepted the offer of the post on 11 November 1815, and in December he was temporarily appointed Deputy Controller until the retirement of his predecessor on 24 February. Byam Martin had long advocated that all future three-deckers should be to one common design – the draught of the *Caledonia* – and this now became the navy's policy.

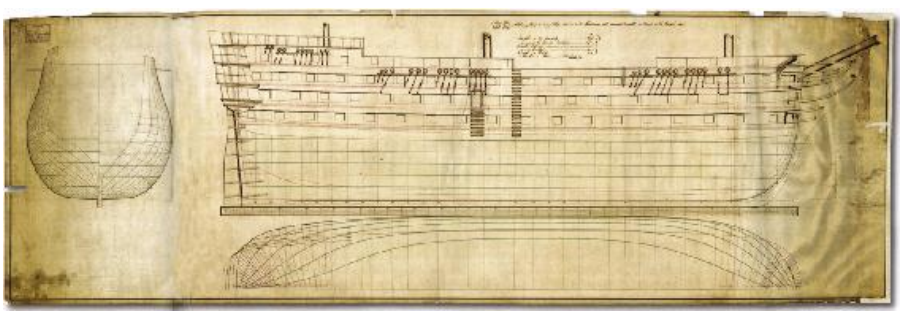
At the same time the Admiralty, taking a fresh look at the size of the fleet planned for peacetime, decided on a force level for the three-deckers of thirteen First Rates and ten 98-gun Second Rates. This was overtaken, however, by a general re-organisation of the rating system which was agreed upon in late 1816 and took effect in the following February. A consequence of the reorganisation was that those carronades mounted on the quarterdeck and forecastle of major warships, previously uncounted in establishing a ship's rating, were to be included. Most of the existing First Rates were not affected by this provision (the *Royal George* and *Queen Charlotte* were raised from 100 guns to 108, but these were the only changes made). However, all fourteen existing Second Rates became First Rates, with their rated establishment of guns raised from 98 to between 104 and 108. Thus by the start of 1820 the RN had twenty-one First Rates, comprising five 120-gun, two 112-gun, two 108-gun, one 106-gun and eleven 104-gun (including five of the last type reduced to harbour service); the new 106-gun *Trafalgar* was nearing completion, while six more new First Rates were also on order, comprising four more 120-gun and two 110-gun ships.

The small three-deckers which were now re-classed do not form part of this study, but they are listed here for the record. Three – the *Saint George* (ex *Britannia*), *Victory* and *Royal Sovereign* – were former First Rates that had been down-graded to 98-gun ships, and were thus restored to their former rank, now as 104-gun ships. The new additions to the ranks of the First Rates were: the *Ocean* (of 1805), now classed as 110 guns; the *Impregnable* (of 1810) as 106 guns; and the *Barfleur* (1768), *Glory* (1788), *Prince* (1788), *Prince of Wales* (1794), *Neptune* (1797), *Temeraire* (1798), *Dreadnought* (1801), *Boyne* (1810) and *Union* (1811), all as 104 guns. Three further Second Rates were on order: the *Trafalgar*, raised to 106 guns; and the final pair of a 2417-ton design ordered in 1812, the *Princess Charlotte* and *London*, both re-classed as 110 guns. The *London* was renamed *Royal Adelaide*

in 1827, prior to her eventual launch in 1828.



UNLIKE her sisters (except for the *Caledonia* herself) the *Britannia* was neither cut down to a two-decker nor fitted for steam. On returning from the Mediterranean in early 1855, she was placed in Ordinary at Portsmouth, and that July was fitted as a hospital hulk. At the start of 1859 she was chosen to become the first training ship devoted entirely to naval cadets, under the command of Captain Robert Harris. Initially she was moored in Haslar Creek, Gosport, but in 1862 she was moved to Portland, and a year later to Dartmouth, where she arrived on 29 September 1863. In 1865 she was joined by the two-decker *Hindostan*, and this illustration shows both hulks moored in the Dart, the two later connected by a covered gangway. In March 1869 the *Britannia* became surplus to requirements (being replaced by the First Rate *Prince of Wales*, which then took over her name as well as her role). The redundant hulk was moved to Plymouth, where she was completed being taken to pieces that November. However, the ship's name was preserved when officer training was transferred ashore to Britannia Royal Naval College in 1905.
[NMM PU6244]



THIS draught for the Improved *Caledonias* shows the Seppings round stern, built-up bow and flat-sheered profile of the class as first designed in 1826. It was used for the *Saint George*, the last First Rate to be completed at Plymouth. She was christened by the wife of the Admiral Superintendent at Plymouth, Rear-Admiral Frederic Warren, and launched at 5.30pm on Thursday, 27 August 1840.

[NMM J1723]

A snapshot of the Victorian fleet at Spithead on 23 June 1845 shown in this coloured aquatint by M Grove. All the ships are labelled, the First Rates being *Queen* (second from left), *Trafalgar* (third ship to the right of *Queen*, with *Superb* and *Rodney* between them), and *Saint Vincent* broadside on in the centre.
[NMM PU7791]

By 1826 six of the new *Caledonia* class were on order, one planned to be launched in the autumn of 1827 (a new *Royal George*) and the other five through to 1831. In fact, three of these ships would not be launched until 1832–33, and the final pair not until the start of the 1840s. By now both the *Nelson* and the original *Caledonia* were also undergoing reconstruction, with their completion scheduled for June 1828 and August 1829 respectively.

Alarm at the newly reviving French navy, particularly with its new programme of 100-gun two-deckers, now led the Navy Board to propose strengthening the *Caledonia* class ships under construction by replacing the 24-pounders on their middle and upper decks by the newly available lightweight 32-pounders. The extra weight that this would entail led Byam Martin to recommend that the new 120-gun ships should be widened (where the stage of their construction allowed) by some 6 to 9 inches; eventually, a complete foot was agreed. This alteration in the design raised the breadth to 54½ft and their burthen to nearly 2700 tons. The *Royal George* was far too advanced in construction to allow this, but the succeeding 120-gun ships were all altered accordingly. In November 1826 the Admiralty also decided to follow the French example by ordering their own

stretched two-deckers – the *Nile* class of three 90-gun Second Rates (*Rodney, Nile* and *London*) were built to the same dimensions as the *Caledonia*, of which they were therefore in effect a razee version (this French term was applied to ships cut down by the removal of one complete deck).

In 1830 Byam Martin urged the Admiralty to place orders for further 120-gun ships, to bring the establishment total up to the level of twenty-four First Rates which he advocated. The intended new ships were designed to be lengthened by some 5ft from the *Caledonia* class (while retaining the same breadth as the broadened ships of that class). The ship recently ordered at Portsmouth would become a fifth unit to this new design. The additional length was required, in the Surveyor's view, to allow for a greater spacing between the lower deck gunports, so that they could comfortably accommodate the new 63cwt model 32-pounders.

The *Caledonia* class (Rule design) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Britannia	Plymouth Dyd	6. 1.1812	12.1813	20.10.1820	Sold 1859
Prince Regent	Chatham Dyd	6. 1.1812	17. 7.1815	12. 4.1823	Sold 1873
Royal George	Chatham Dyd	3. 9.1819	6.1833	22. 9.1837	Sold 1875
Saint George	Devonport Dyd	27. 5.1819	5.1827	27. 8.1840	Sold 1883
Neptune	Portsmouth Dyd	12. 2.1823	1.1827	27. 9.1832	Sold 1875
Royal William	Pembroke Dyd	30.12.1823	10.1825	2. 4.1833	Burnt by accident 1899
Waterloo	Chatham Dyd	9. 9.1823	5.1827	18. 6.1833	Burnt 1918
Trafalgar	Woolwich Dyd	19. 2.1825	12.1829	21. 6.1841	Sold 1906

The *Caledonia* class (Rule design) – dimensions in feet and inches

VESSEL	GUN DECK	KEEL	BEAM[1]	DEPTH	TONS
Original design	205 0	170 11	53 6	23 2	2602 $^{15}/_{94}$
— as completed:					
Britannia	205 0	170 9¼	53 8	23 2	2616 $^{15}/_{94}$
Prince Regent	205 0¼	170 9	53 7¼	23 2¼	2613 $^{26}/_{94}$
Royal George	205 7½	171 0	53 7½	23 2	2615 $^{57}/_{94}$
Broadened design	205 5½	170 6	54 0	23 2	2693 $^{71}/_{94}$
— as completed:					
Saint George	205 5¾	170 5	54 9¼	23 3¼	2719 $^{85}/_{94}$
Neptune	205 8	170 5¼	54 7½	23 2	2705 $^{75}/_{94}$
Royal William	205 5½	170 3	54 7	23 0	2698 $^{66}/_{94}$
Waterloo	205 6	170 5½	54 8	23 2	2718 $^{86}/_{94}$
Trafalgar	205 6	170 5	54 9½	23 2	2721 $^{35}/_{94}$

Notes [1] The quoted figure is the breadth used for tonnage; overall breadth was 11in broader (*Saint George* and *Waterloo* 6in broader overall, *Trafalgar* 10in broader overall)

The new Liberal administration, which took office from 1830, brought in James Graham as First Lord with Horatio Nelson's old flag captain Thomas Hardy (now a full admiral) as his First Naval Lord. As part of the government's programme of radical reform, the Navy Board was abolished, its functions merging into those of the Admiralty, but it also set out revised force levels which included just twenty First Rates, a reduction by four from Byam Martin's

aspirations. However, Graham's Board in 1834 recognised that the state of readiness of part of the battlefleet should be raised, and adopted a concept of 'Advanced Ships' – ships remaining in reserve but fitted out ready for bringing rapidly into commission if emergencies arose. Initially a force level of twelve ships of the line and six large frigates was adopted; later the total would be increased to thirty Advanced Ships.

Britannia

The *Britannia* was launched in October 1820, and by 20 December she had completed fitting for Ordinary, at a total cost of £111,6:[A-Z]30. She was fitted as a Guard Ship (for £13,943) in December 1822, and commissioned in October 1823 under Captain W H Bruce, as the flagship of Sir Alexander Cochrane. She was paid off in the following April, but promptly recommissioned on 4 April under Captain Philip Pipon, as the flagship of Sir James Saumarez. In turn, on 30 April 1827 command passed to Captain Edward Hawker, with the Earl of Northesk raising his flag in the ship.

The First Rate was refitted for sea service in September 1829 (with a further expenditure of £26,172 including earlier 'making good' some defects) and was recommissioned under Captain George Burdett, as flagship of Sir Pulteney Malcolm for the Mediterranean Fleet. She was refitted as a flagship at Portsmouth in February 1836 (for £10,661). She was fitted again at Portsmouth from August to November 1840, at a cost of £3907).

As the move towards an all steam-assisted battlefleet gathered pace in the late 1850s, it was decided to cut down all of the Broadened *Caledonia* class from three to two decks, lengthen them aft by 11ft and fit 500nhp engines and single screws. Four ships were designated in August 1858 to undergo this process, and another four in February 1859. Five of these ships were *Caledonia* class, while the *Queen* had also derived from that design and the *Nelson* was the best of the preceding Surveyors' class (the total was made up by the *Rodney*, converted from a two-decker 92-gun ship, albeit of similar dimensions). In being razeed in this way, the ships obviously ceased to be First Rates, but their conversion schedules are tabulated below for sake of completeness. A further *Caledonia* class ship, the *Prince Regent*, which had already been razeed in 1845–46, was similarly ordered to be fitted as a screw battleship a year later. Initially designated 90-gun ships, two bow-chasers were replaced with a pivot gun on the forecastle for a total of 89 guns.

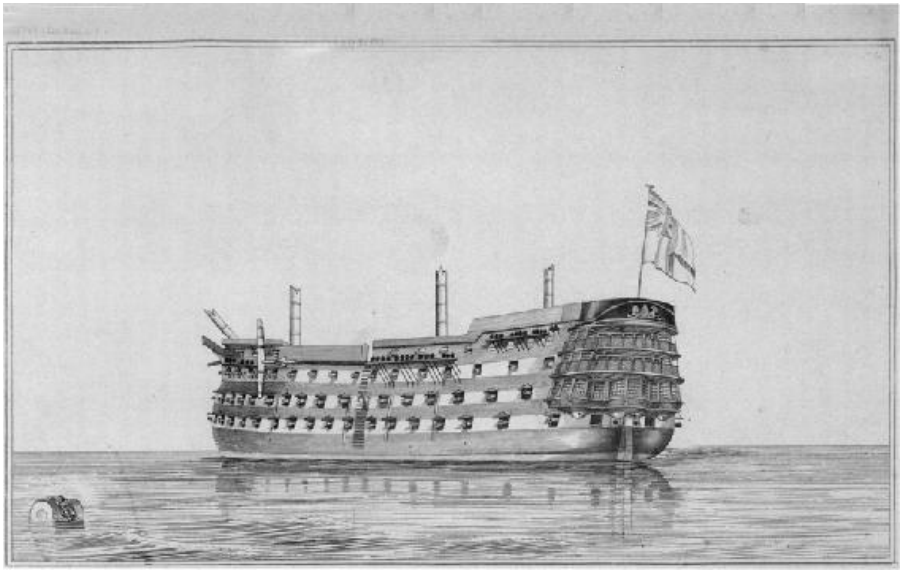
Prince Regent

The *Prince Regent* was in great measure fitted for sea while still on the

stocks, and had been commissioned on 6 December 1822 by her first captain, William Henry Webley Parry, as the flagship of Vice-Admiral Sir Benjamin Hallowell, C-in-C at the Nore. Following her launching in 1823, she completed fitting as a Guard Ship by September, for a total cost of £119,283. Her only commission as a First Rate was to last until 1832, mostly spent based at Chatham. On 19 December 1825 Captain Constantine Richard Moorsom took command, as the ship became the flagship of his father, Vice-Admiral Sir Robert Moorsom, again the C-in-C at the Nore. In turn, command passed on 24 July 1827 to Captain George Poulett, as flagship of Vice-Admiral Sir Henry Blackwood, C-in-C at the Nore. Captain James Whitley Deans Dundas became her commanding officer on 6 August 1830, flying the flag of Rear-Admiral William Parker, serving in the Tagus until early 1832, whence the ship returned to Portsmouth, paying off into Ordinary in February.

The *Prince Regent* was by 1843 found to be very crank, and it was proposed that she be cut down to two decks, and fitted as a 92-gun ship along the lines of the *Nile* class Second Rates. She was repaired, razeed and fitted at Portsmouth (for a total cost of £53,815) between March 1844 and September 1847, being re-rated as a 90-gun ship in March 1847. Technically, she ceased to be a subject of this volume, but for the sake of continuity her subsequent career follows. She was recommissioned on 7 December 1847 under Captain William Fanshawe Martin (the eldest son of the former Controller), and deployed to the Mediterranean from December 1847 until early 1851. Captain Martin being promoted rear-admiral in March 1851, the *Prince Regent* became his flagship, and Robert Harris became her new captain. On 20 May 1852 Captain Frederick Hutton took command, flying the flag of Vice-Admiral Richard Curry, and the ship served with the Western Squadron until December 1853. Captain Henry Smith took over on 7 March 1854, and during the Russian War the *Prince Regent* was deployed to the Baltic in early 1855. On return to Portsmouth, she was once again paid off into Ordinary. She was converted to a screw battleship in 1860, finally rejoining her former *Caledonia* class sisters which were razeed at the same time. But she was never recommissioned, being finally taken to pieces in 1873.

AN oil painting of the *Britannia* entering Portsmouth harbour done by George Chambers about 1835. It forms an interesting companion-piece with the Thomas painting on pages 88–89 which gives a bow view of the ship at much the same time. Chambers is probably representing the ship on her return from duty as Mediterranean flagship, and as one of the last First Rates in service with a traditional flat stern, *Britannia* presents an almost timeless image of the kind of ships that defeated Napoleon, an achievement the Navy was determined the world should not forget. In the background is the old *Victory*, now a harbour flagship but preserved because of her association with Nelson, and beyond her many decommissioned ships in Ordinary. The existence of these ships, and an understanding of their potential on the part of the country's rivals, made for a credible deterrent for half a century.
[NMM BHC3245]



THIS sketch of the *Waterloo* from the port quarter shows the Seppings round stern of the modified *Caledonia* class ships. The stern gunports remain, although no guns were normally positioned here on the lower deck, so these ports chiefly opened to air and illuminate the gunroom.
[NMM PU6159]

Razees of 120-gun ships to 89-gun Second Rates

SHIP	DOCKYARD	BEGAN	UNDOCKED	COMPLETED
10 August 1858 Order				
Saint George	Devonport	21. 8.1858	19. 3.1859	12. 7.1859
Neptune	Portsmouth	7. 3.1859	6. 8.1859	
Trafalgar	Chatham	16. 8.1858	21. 3.1859	14. 8.1859 *
Queen	Sheerness	23. 8.1858	5. 4.1859	30.10.1859
5 February 1859 Order				
Rodney	Chatham	16. 3.1859	11. 1.1860	6.1860 *
Waterloo	Sheerness	1. 4.1859	12.11.1859	4.1860
Royal William	Devonport	21. 3.1859	9. 2.1860	9. 2.1860
Nelson	Portsmouth	10. 3.1859	7. 2.1860	1. 9.1860
3 February 1860 Order				
Prince Regent	Portsmouth	8. 2.1860	27. 5.1861	27. 5.1861

* both conversions at Chatham were completed at Sheerness after undocking

Royal George

The ship ordered as *Neptune* was renamed *Royal George* on 12 February 1823. Upon launching, she was fitted for Ordinary, roofed over forwards and aft, and sailed on 3 December 1827 to Sheerness, where her hull was doubled for protection. Her total cost including fitting out to this stage had been £87,418. In February 1833 the doubling was removed, but she remained in Ordinary until 30 October 1852, when it was ordered that she should be fitted as a screw ship of the line, which was carried out initially at Chatham (between April

1852 and June 1853), then at Sheerness (until December 1853) and finally at Plymouth (completing March 1854), at a total cost of £64,236.

Unlike her sisters, she was not lengthened, and only received a 400nhp engine compared with the 500nhp engines fitted in the modified group, but retained her 120-gun armament and three-decker status as a First Rate. The *Royal George* finally commissioned in October 1853 under Captain Henry John Codrington, and sailed from Spithead on 11 March 1854 with Vice-Admiral Sir Charles Napier's fleet for service against the Russians in the Baltic. By her second year in the Baltic, she had been reduced to 102 guns. After returning to the UK, she took part in the Spithead Review on 23 April 1856, leading the fleet past the queen's yacht *Victoria and Albert*, as the flagship of Vice-Admiral Sir George Francis Seymour, the Commander-in-Chief at Portsmouth.

By 1860 she was back in Ordinary at Plymouth, and on 9 March it was decided that she was no longer effective as a three-decker, but was to follow her erstwhile sisters in being cut down as a 89-gun Second Rate. She was razeed at Devonport between 2 April 1860 and 4 January 1861. Like the other five, in her new form she carried thirty-two 8in shell guns (of 65cwt) on her lower deck, thirty-four 32-pounder MLSB (muzzle-loading smooth bore) guns of 56cwt on her upper deck, and twenty-two 32-pounder MLSB guns (but of 42cwt) on her quarterdeck and forecastle, with a single 68-pounder MLSB gun (of 95cwt) on a pivot mounting on the centreline. Later in 1861 she was reduced to 86 guns, then to 78 guns in 1863, and later to 72. In March 1865 she became a Coast Guard vessel at Kingstown before ending her career as a receiving hulk at Portsmouth. On 23 January 1875 she was sold to Messrs Castle at Charlton for breaking up.

Saint George

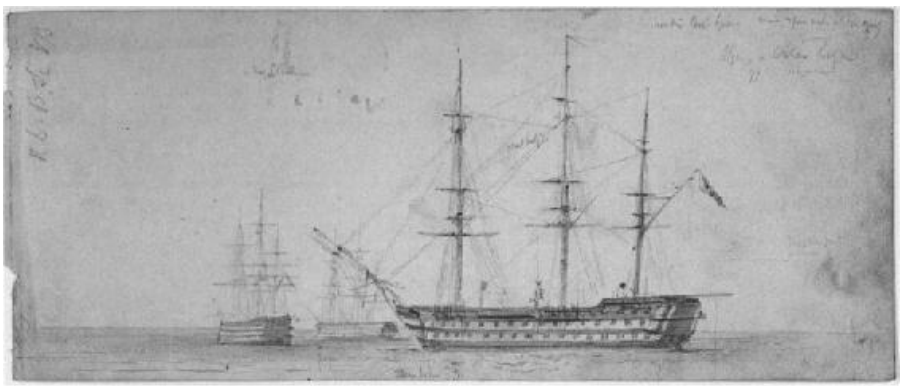
The ship was launched in August 1840, having cost £76,009, and placed in Ordinary. Between January 1843 and October 1845 she was converted to an Advanced Ship (for £17,095) and was fitted out as a Guard Ship (for £9301) in July 1850. During the Russian War she was finally fitted for sea in February/March 1854 (for £8286) and commissioned in February 1854 under Captain Harry Eyres, for the Baltic.

On 21 August 1858 she was taken in hand at Plymouth for conversion to a screw battleship, the work being completed on 19 March 1859, following which she had a 500nhp engine fitted before being handed over to the First Division of the Steam Ordinary on 12 July. The *Saint George* was recommissioned in June 1860. In May 1864 she became a Guard Ship at Plymouth under Captain E B Price,

now with just 72 guns. She was sold to Messrs Castle in 1883 to be taken to pieces.

Neptune

The *Neptune* had cost £73,595 to build when launched in September 1832. In December 1832 she was fitted for Ordinary, and housing was built over the waist. Like most of her sisters, she was not to see any action until the 1850s. In October 1844 repairs to her were effected at Portsmouth (for £12,858) and in December 1852 she was fitted out there as a Guard Ship (for £10,314). With the outbreak of the Russian War, she was again refitted for service (for £10,314) between June 1853 and March 1854, and commissioned under Captain Frederick Hutton for service in the Baltic, as the flagship of Rear-Admiral Armar Lowry Corry, remaining in commission until 1857.



A graphite sketch by Sir Oswald Brierly of the *Royal William* later in life after conversion to a screw ship in 1859–60. In the process she was cut down to a two-decker Second Rate of 90 guns. The majority of her sisters (apart from the *Caledonia* herself and the *Britannia*) followed suit. As such, their complement was reduced to 830 men, and they carried thirty-two 8-inch shell guns on the lower deck, thirty-four 32-pounders (of 56cwt) on the upper deck, and twenty-six 32-pounders (of 42cwt each) on the quarterdeck and forecastle, together with a single 68-pounder mounted on a centreline pivot in the bows. An intriguing detail of the sketch is a bullock being hoisted aboard from the main yardarm.
[NMM PU9328]

THE visit by Queen Victoria to HMS *Queen* at Portsmouth on 1 March 1842 as captured by Lieutenant Robert Strickland Thomas. Sir Baldwin Wake Walker, who commanded the ship from April 1845 (he was to become Surveyor of the Navy in 1848) reported her as 'the finest ship in the world'. Completion had been hastened so that she could be available to take part in the Syrian campaign, and during her service in the Mediterranean she demonstrated her superb sailing qualities. [NMM BHC0629]

In August 1858 it was decided to convert her to screw propulsion, along with her sister-ships *Saint George* and *Trafalgar*, and the slightly more modern *Queen*. The process involved docking the vessels and lengthening them, at the same time cutting them down by a deck so that they would emerge as 90-gun Second Rates.

The conversion of the *Neptune*, at Portsmouth Dockyard, was completed on 7 March 1859, although fitting her for sea lasted until 6 August. In December 1859 she was recommissioned under Captain Frederick Archibald Campbell for service in the Mediterranean. By

1865 she was back at Portsmouth, where she remained until, like others of her kind, she was sold to Messrs Castle, shipbreakers at Charlton, for dismantling.

Royal William

The *Royal William* was launched in April 1833, having been built at a cost of £78,586. She was then coppered (for £2678) and jury-rigged (for £2835) before sailing on 26 June 1837 for Plymouth, where she was fitted for £19,125. In 1854 she underwent a refit there (for £14,335) to ready her for service in the Russian War, and was commissioned in February 1854 under Captain John Kingcome for the Baltic fleet. Returning to Plymouth in February 1855, she raised the flag of Rear-Admiral Sir James Hanway Plumridge, as a Guard Ship there.

A rigged model of the *Royal Albert* as originally designed by Lang. Concerns about the design principles of Sir William Symonds led to this order for a ship which did not derive from the Surveyor's now contentious *Queen* draught. The ship would have been the largest pure sailing warship ever built for the Royal Navy, but she was re-ordered as a steam screw liner while the ship was still on the stocks.
[NMM F7980-3]

On 5 February 1859 it was confirmed that, following her sister *Saint George*, the *Royal William* was to be converted at Devonport to a 90-gun screw battleship, with a 500nhp engine fitted, and she was razeed to a two-decker between 21 March 1859 and December 1860, when she joined the Second Division of the Steam Reserve. She saw no service as a screw ship, being converted to a training ship (with 78 guns) and renamed *Clarence* in 1885. On 26 July 1899 she was burnt by accident in the Medway.

Waterloo

The *Waterloo* was launched in June 1833, and sailed on 19 July 1833 to Sheerness, where her waist was housed over and she was placed in Ordinary. She had cost £64,629 to build, plus £5924 for housing. She was fitted as an Advanced Ship at Sheerness between October 1841 and March 1843 (at a cost of £12,848) and then fitted as a flagship there between October and December 1851 (for £16,497). In December 1853 she was commissioned under Captain Lord Frederick Kerr, and hoisted the flag of Vice-Admiral William Gordon in July 1854.

In April 1859 she was taken in hand at Sheerness for conversion to a screw battleship. She was undocked in April 1860 on completion of the work, and in the following April she was fitted for the Second Division of the Steam Reserve. On 27 February 1862 her name was changed to *Conqueror*, and, after spending a further 21 months at Sheerness, she recommissioned under Captain William Garnham Luard for service in the Far East. In early September 1864, she took part in the bombardment of Shimonoseki, at the far western point of Honshu. The *Conqueror* returned to Sheerness in 1866, moving to Chatham in 1870. On 11 August 1876 she was renamed again, becoming the Marine Society training ship *Warspite*, a role which she continued to fill until she was accidentally burnt on the Thames on 20 January 1918.

Trafalgar

The *Trafalgar* was the final ship to be completed to the *Caledonia*'s design, being launched in June 1841 and having cost £75,797 to build. As with her sisters, she was promptly taken downriver to Sheerness and fitted for Ordinary (reserve), at a cost of £1283. She was fitted as an Advanced Ship there, a task which was completed in October 1844 for £17,954, including a remodelling of her stern structure. Still at Sheerness, the *Trafalgar* was then fitted as a flagship between February and May 1845 (for £18,838). In October 1846 she commissioned under Captain John Neale Nott for the Channel Fleet, then sailing to Lisbon as the flagship of Rear-Admiral Sir Francis

Augustus Collier. Returning to Sheerness in July 1850, she spent the next twelve months refitting (for £9214), before passing into reserve again. In 1854 the ship was recommissioned under Captain Henry Francis Grenville and sailed for the Black Sea, where she took part in the bombardment of Sebastopol on 11 October 1854.

In August 1858 she was ordered to be converted at Chatham into a screw battleship. After the work was completed there, the *Trafalgar* proceeded to Sheerness where the new engine was fitted, and she was commissioned under Captain Edward Gennys Fanshawe in June 1859, for Channel service. In May 1865 she recommissioned as a Guard Ship for Queensferry under Captain George Hancock. By 1870 the ship was a sea-going training ship for cadets, and three years later she became a training ship for boys at Portland, being renamed *Boscawen*, a role she maintained until the next century. She was finally sold to Messrs Castle on 10 July 1906 for breaking up.

THE *QUEEN* CLASS

The final ship ordered to the broadened *Caledonia* class design was to undergo considerable changes even before being laid down. This ship was ordered from Portsmouth Dockyard in 1827 as the *Royal Frederick*, but in 1831 work on the frames intended for her construction, which were one-seventh complete, were suspended in order that the Portsmouth yard could concentrate on the new Fourth Rates there.

In 1832 the Navy Board was abolished, and warship construction and maintenance became a direct responsibility of the Admiralty. Captain William Symonds was newly appointed as the Surveyor of the Navy, although many of the practical aspects of ship design devolved upon his assistant, John Edye. Symonds was a fervent believer that speed under sail was paramount and that even ships of the line would benefit from finer hull forms than had been thought necessary by previous designers. On 2 September 1833 Symonds produced a new design for a First Rate of only 110 guns, and the following day saw the *Royal Frederick* re-ordered to this plan. The revised gun establishment for this ship now became twenty-eight 32-pounders of 55cwt and two 68-pounders of 60cwt on the lower deck, an identical allocation on the middle deck, and thirty-two medium 32-pounders (of 49cwt) on the upper deck. The armament on the quarterdeck and forecastle was reduced to twelve short 32-pounders (of 40cwt) and two 68-pounder carronades (36cwt), with four 18-pounder carronades (10cwt) on the roundhouse.

These changes required a drastic alteration to her frames, of which some three-quarters had already been cut but not yet erected.

Nevertheless, it was agreed that these should be reconverted. On 12 September a second ship was ordered to this draught, to be similarly built at Portsmouth and named the *Royal Sovereign*. On 3 October a further pair were ordered, to be built at Pembroke and given the names *Victoria* and *Algiers*.

On 7 May 1834 the construction of the *Royal Sovereign* at Portsmouth was suspended, and on 11 December the pair assigned to Pembroke were re-ordered; they were now to be built as 74-gun two-deckers, although the dimensions and sharp hull lines of the Symondite design were to be retained. For the 74s it was decided that the lower deck should carry a complete battery of twenty-eight 68-pounders (of 65cwt). The main deck would mount the same number of 32-pounders (of 56cwt), and there would be a further pair of this calibre on the forecastle. The upper deck would carry sixteen 32-pounders (of 48cwt).

This situation did not last long, and the confused record of the Programme of Works over the next few years reflects a general uncertainty over the Symondite designs. In 1835 the *Algiers* was reinstated as a 110-gun ship, while the *Victoria* was not mentioned. In 1836 the *Victoria* was again shown as an intended 74-gun two-decker, while the *Algiers* remained a 110-gun ship. In 1837 the names were reversed, with the *Victoria* now being the planned three-decker, but by 1839 both Pembroke ships were again programmed at 110 guns (5 February 1839). To add to the confusion, the Portsmouth pair were renamed on 12 April 1839; the first ship – which was to be launched on 15 May – became the *Queen*, in honour of the new monarch, while the suspended vessel became the *Royal Frederick* instead. Finally, on 5 December 1839 the *Algiers* was removed for the last time from the list of three-deckers, when she was re-ordered as a two-decker Second Rate to the lines of the 90-gun *Albion*.

The final armament of the *Queen* was somewhat different from that envisaged at the start of construction. She carried twenty-four 32-pounders of 56cwt and six 65cwt 8-inch shell guns on her lower deck, twenty-six 32-pounders and four 8-inch shell guns on her middle deck (of the same weights), thirty 32-pounders (of 41cwt) on her upper deck, and twenty 32-pounders (six of 32cwt and fourteen of 25cwt) on her quarterdeck and forecastle.

Having cost £70,472 to build and another £7257 to fit for sea, she entered service on 1 October 1840, under Captain John William Montagu. She was refitted as flagship for the Mediterranean in November 1841, at a cost of £17,408. She served during the next few years successively flying the flags of Vice-Admiral Sir Edward William Campbell Rich Owen in the Mediterranean, of Admiral Sir John West in the Channel (based at Devonport), and of Vice-Admiral Sir William

Parker in the Mediterranean again. She was refitted as a flagship once more at Plymouth for £13,095 between May and August 1849, and reclassed as a 116-gun ship. Recommissioned under Captain Frederick Thomas Michell from 2 July 1852, the *Queen* took part in the bombardment of Sebastopol on 11 October 1854; command passed on 11 July 1855 to Captain Robert Fanshawe Stopford before the ship returned from the Mediterranean to pay off on 6 September 1856.

In August 1858 an order was issued for the *Queen* to be converted to steam screw propulsion, and fitted with a 500nhp engine (by Maudslay, Sons & Field); in the process she would be cut down (razeed) to a two-decker, and be re-classed as a 90-gun ship. As completed, she actually carried 86 guns – thirty 8-inch shell guns of 65cwt on the lower deck, thirty-two 32-pounders of 56cwt on the upper deck, and twenty-two 32-pounders of 42cwt on the quarterdeck and forecastle, along with two 68-pounders (of 95cwt) on pivot mountings. She began the conversion at Sheerness Dockyard on 23 August 1858, and it was completed on 5 April 1859. Her fitting for sea at Portsmouth was completed on 30 October and she commissioned in November 1859 under Captain Charles Farrell Hillyar for the Mediterranean Fleet, serving under his command until 1864, when the ship paid off into Ordinary at Portsmouth. The *Queen* was sold in 1871 to be broken up by Messrs Castle at Charlton.

The *Queen* Class (110 guns) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Queen [1]	Portsmouth Dyd	3. 9.1833[2]	11.1833	15. 5.1839	Converted to a steam two-decker 1858-59; sold 1871
Royal Frederick [3]	Portsmouth Dyd	13. 9.1833	7.1841	24. 3.1860	Re-ordered as steam ship before launch
Victoria	Pembroke Dyd	8.10.1833	5.1844	26. 8.1858	Re-ordered as steam ship before launch
Algiers	Pembroke Dyd	8.10.1833	—		Not built as a three-decker

[1] originally *Royal Frederick*, renamed 12.6.1849. [2] originally ordered 29.10.1827 to earlier design (see Modified *Caledonia* class).
[3] originally *Royal Sovereign*, renamed 12.4.1859.

Table 45: The *Queen* Class (110 guns) – dimensions in feet and inches

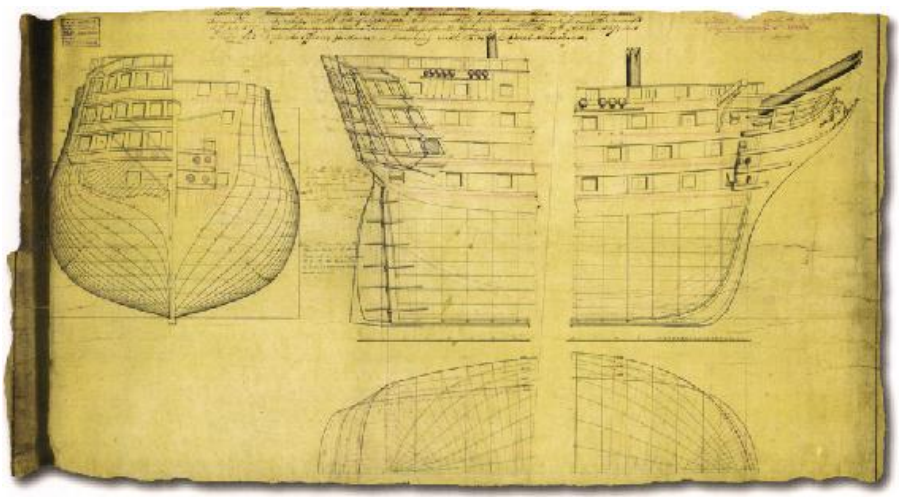
VESSEL	GUNDECK	KEEL	BREADTH[1]	DEPTH	TONS
First Design:	204 0	165 11	59 1¾	23 9	3082 ⁵⁹⁄₉₄
Modified Design:	204 0	166 5⅛	59 2	23 9	3099 ¹⁶⁄₉₄
Completed ships:					
Queen	204 2½	166 5½	59 2½	23 9	3103 ³⁵⁄₉₄

[1] breadth for tonnage; overall breadth was 10 inches greater. The *Frederick William* (ex *Royal Frederick*) is not shown in this table as she was never completed as a three-decker.

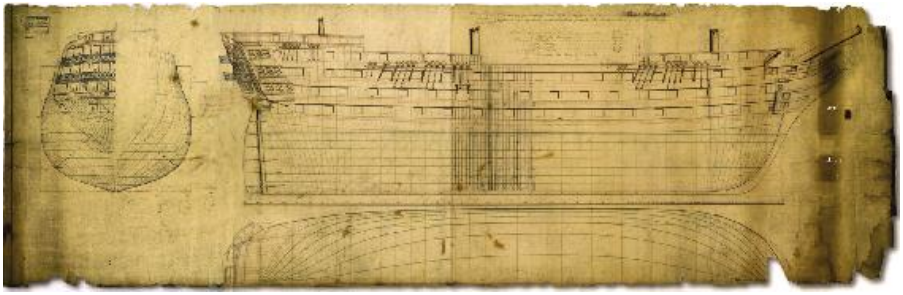
Four further First Rates were ordered in 1842 and 1844, originally intended to be 110-gun ships to the design of the *Queen*. The first (*Prince of Wales*) was ordered from Portsmouth Dockyard on 14 March 1842, two more (*Windsor Castle* and *Royal Sovereign*) were ordered from Pembroke and Portsmouth Dockyards respectively on 19

February 1844, and another (*Marlborough*) was ordered from Portsmouth Dockyard on 20 March 1844. However, on 29 June 1848 all four – together with the *Royal Frederick* (building at Portsmouth) and *Victoria* (building at Pembroke) – were re-ordered to amended designs. At this date, only the first of the quartet (*Prince of Wales*) had actually been laid down (on 10 June 1848). Of the remaining three, the *Royal Sovereign* was laid down on 17 December 1848, the *Windsor Castle* in May 1849 and the *Marlborough* on 1 September 1850.

Among the *Queen*'s intended sister-ships, the *Royal Frederick* and *Victoria*, like the *Queen* herself, were reclassed as 116-gun ships in 1849 while still on the stocks, and at the same time those ordered in 1842 and 1844 were rerated as 120 guns. Little more would happen to either the *Royal Frederick* or *Victoria* until February 1857, when an order was issued for both to be converted to screw propulsion.



MUCH of the indecision and official changes of mind can be followed in the annotations and crossings-out on this *Queen* class draught originally produced for 110-gun ships to be called *Royal Frederick, Royal Sovereign, Victoria* and *Algiers*, to a design of 2 September 1833. The first became the *Queen* and the *Royal Sovereign* was then renamed *Royal Frederick* but work on the frames of this ship was suspended in May 1834. She was finally laid down in 1841 but spent many years on the stocks. In 1849 she was reclassed as a 116-gun ship, but in 1857 when she was still unfinished she was ordered to complete as a screw ship (without any lengthening of her hull) and in 1859 it was decided that in the process she would be cut down to an 86-gun two-decker; she was again renamed the *Frederick William* in January 1860, prior to her launch on 24 March 1860. This draught bears the dates 18 July 1837 and 15 September 1842; a further note of 17 November 1848 states 'This sketch is now applicable only to the *Royal Frederick* & *Victoria*.' Note that the rake of the stern is successively reduced in two modifications, by Peake in 1842 (in red) and a later anonymous alteration (in blue).
[NMM L2055]



IN this draught of the 110-gun *Queen* the body plan reveals the sharp lines of the Symondite form, more like that of a frigate than the squarer capacious shape traditionally favoured for three-deckers. This tended to make Symonds's designs fast under sail, but they were often criticised for not providing steady gun-platforms. The stern was heavily raked (which in service proved vulnerable in a seaway) and two open galleries with iron balustrades have been added later. She shows solid barricades on forecastle, quarterdeck and roundhouse. This was the first class designed for an all 32-pounder armament (apart from the six largest guns firing 68-pounder shot, and of course the four 18-pounder carronades on the roundhouse), although the 32-pounders were of differing weights (55cwt on lower and middle decks, 49cwt on the upper deck, and short 40cwt guns the upperworks). [NMM J8088]

THE *ROYAL ALBERT* (1854)

Twelve days after the order was first placed for the *Prince of Wales*, another was assigned to Woolwich Dockyard for what was to be the largest pure sailing warship ever designed for the Royal Navy. The hostility of the First Naval Lord, Cockburn, to Symonds's designs led to a decision to commission a brand new design which did not derive from the Surveyor's controversial *Queen*. Oliver Lang, the Master Shipwright at Woolwich, prepared a draught that was essentially an enlarged version of the *Trafalgar* of 1820, the last pre-Symondite three-decker. It provided for a ship with a length of 220ft (16ft longer than the *Queen*) able to carry 120 guns and 1000 men.

On 24 March 1851 the design was revised to enlarge the ship to 3463 tons by lengthening her 12ft 9in aft, but in less than a year a further change of plan resulted in the ship – the *Royal Albert* – being re-ordered as a screw battleship, and her subsequent history appears in the next chapter.

The *Royal Albert* (120 guns) – construction history

VESSEL	BUILDER	RE-ORDERED	BEGUN		
Royal Albert	Woolwich Dyd	28. 3.1842	8.1844		
		CONVERSION BEGUN	LAUNCHED	COMPLETED	FATE
		25.10.1852	13. 5.1854	19.11.1854	Sold 9.1884

The *Royal Albert* (120 guns) – dimensions in feet and inches

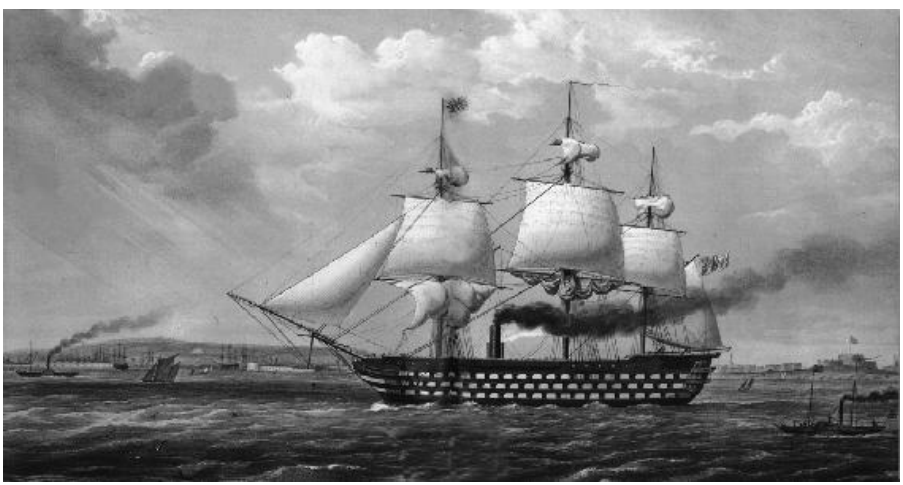
VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Design: original	220 0	177 2¾	60 0	25 0	3393 $^{79}/_{94}$
Design: 1851	?	179 10	60 2	25 0	3462 $^{75}/_{94}$
– as completed:					
Royal Albert	232 9	193 6[1]8	60 2	24 2	3726 $^{18}/_{94}$

[1] breadth for tonnage; the overall breadth was 10in greater.

CHAPTER

8

The Transition to Steam



AN engraving by G H Atkins, published in 1853 of the newly commissioned *Duke of Wellington* under sail and steam. The ship was converted on the stocks, with the insertion of a 23ft midsection, and a further 7½ft added elsewhere. She cost £176,918 to build, including £40,716 for her Napier geared machinery and £40,716 for fitting out.
[NMM PAH9261]

Notwithstanding an early desire to add a screw-driven First Rate to the steam-powered fleet, the late 1840s saw little progress in that direction. The resignation of Symonds from the post of Surveyor in June 1847 left his former Assistant, John Edye, in temporary charge of his office. However, responsibility for construction policy was placed in the hands of a Committee of Reference on Shipbuilding, under the chairmanship of Captain Lord John Hay, and this body became a very active advocate of the need to bring steam propulsion to the battlefleet. In February 1848 a new Surveyor, Captain Sir Baldwin Wake Walker, was appointed, but his role was envisaged as administrative rather than technical, so in order to carry out the

detailed design work two Assistant Surveyors were appointed, Edye being one and the second being Isaac Watts.

From 1848 onwards a series of large two-decker Second Rates were ordered to have steam machinery installed, using engines intended for the iron-hulled frigates *Greenock, Vulcan, Megaera* and *Simoom*, whose shortcomings had led to a decision in April 1847 to complete them as troopships with lower-powered engines. Those scheduled for conversion included two 90-gun ships, the *Nile* and *London*, The 780hp Napier engine intended for the *Simoom* was to be fitted into the *Nile*, while the 700hp Boulton & Watt engine scheduled for the *Vulcan* was earmarked for the *London*. The 84-gun *Powerful* was similarly scheduled to receive the 556hp Fairbairn engine from the *Megaera*. The Admiralty then approached the Surveyor to seek his opinion on Hay's proposal to fit these three engines, and in February 1849 the Surveyor signalled his strong opposition – it would be too expensive to do, and would ruin the ships. In the event these conversions were cancelled, leaving the three powerful engines available for other conversions (the engine for the *Greenock* was not used).

However, the Surveyor was keen to complete a steam three-decker as soon as possible, and in December 1851 sent Isaac Watts, together with his colleague John Abethell, to Pembroke Dock where they carried out an inspection of the suspended 120-gun *Windsor Castle*. They recommended her as suitable, and on 19 January 1852 it was directed to complete her as a 130-gun First Rate, using the 780nhp Napier engine built for the *Simoom;* on 30 September 1852 this engine was re-rated at 700nhp; on the next day the new ship was renamed *Duke of Wellington*. The design was approved for her to be lengthened by a 23ft section amidships to incorporate the machinery, and with a 7½ft section added at the stern to give a finer run aft to improve propeller efficiency. She was then towed to Portsmouth on 9 October, and there she was fitted for sea between 11 October 1852 and 27 November 1853 at a cost of £40,716, making her complete first cost £176,918.

The increased armament for the lengthened ship now comprised ten 8-inch shell guns of 65cwt and twenty-six 32-pounders of 56cwt on the lower deck, six 8-inch shell guns and thirty 32-pounders of the same weights on the middle deck, thirty-eight 32-pounders of 42cwt on the upper deck, and twenty 32-pounders of 25cwt on the quarterdeck and forecastle, with a single 68-pounder gun of 95cwt pivot-mounted on the centreline as a bow-chaser.

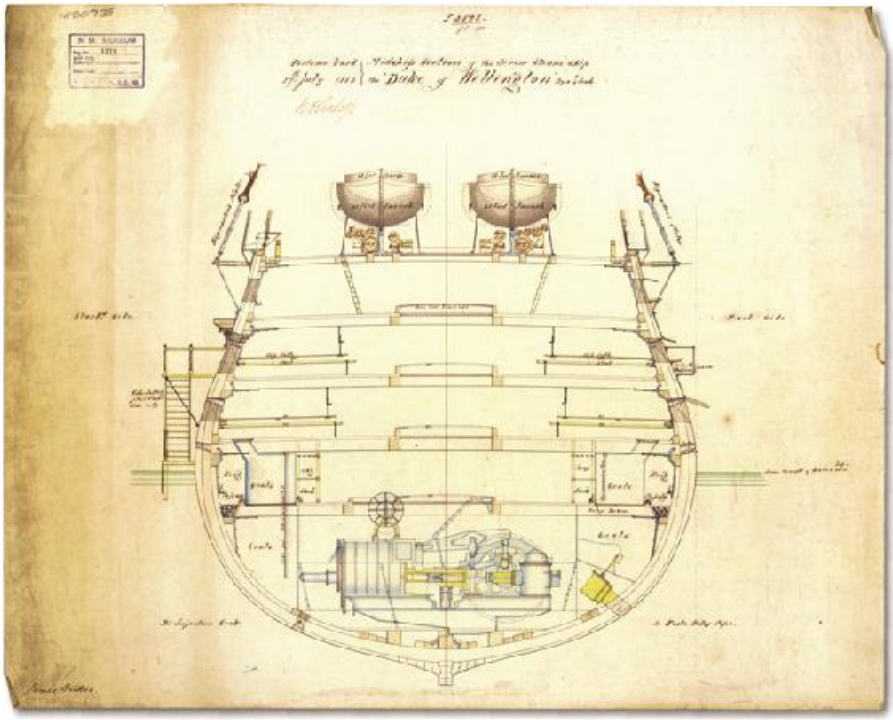
On 23 October 1852, directions were issued for the 120-gun Lang-designed ship building at Woolwich, the *Royal Albert*, to be similarly fitted with a steam engine. She was to receive the 620nhp Seaward & Capel engine originally intended for the wooden-hulled screw frigate

Euphrates, which had been cancelled in May 1849. However, on 23 October the Committee decided to use a less powerful engine of 400nhp, although this machinery was later deemed inadequate for the three-decker, and a tender for a new 500nhp engine was accepted from Penn in January 1854.

As the *Royal Albert* was the only First Rate of the mid-nineteenth century whose design was not derived from the *Caledonia* class, unsurprisingly she emerged from her conversion with considerable differences. Lang received – and perhaps deserved – some of the criticism for this.

On 30 October 1852 two further First Rates were approved for conversion to steam. The *Marlborough*, in frame at Portsmouth, was to be completed as a 131-gun screw ship, along similar lines to the *Windsor Castle*. The *Marlborough* would be allotted the same armament. She was now described as a ship of 3226 tons burthen, indicating that her design had been lengthened. The older 120-gun *Royal George* (2616 bm), currently in dock at Chatham, was similarly approved for conversion, requiring a 400nhp engine.

THE *Marlborough* was intended to be converted like the *Duke of Wellington*, but she was given an extra 5ft extension of her bow during her conversion on the stocks, compared with the *Duke of Wellington*. As built, she was broader and actually measured 206ft 3⅝in overall by 61ft 2½in (60ft 4½in for tonnage) by 25ft 10in depth in hold – a massive burthen of 4000 tons. She had cost £203,554 to build, including £107,731 for her hull, £51,120 for her machinery and £28,333 for fitting out. As a crude measure of how the First Rate had grown from its earliest days, this ship sports twenty-two gunports a side on the lower deck (including chase positions) compared with thirteen in the *Sovereign of the Seas*.
[NMM L0701]

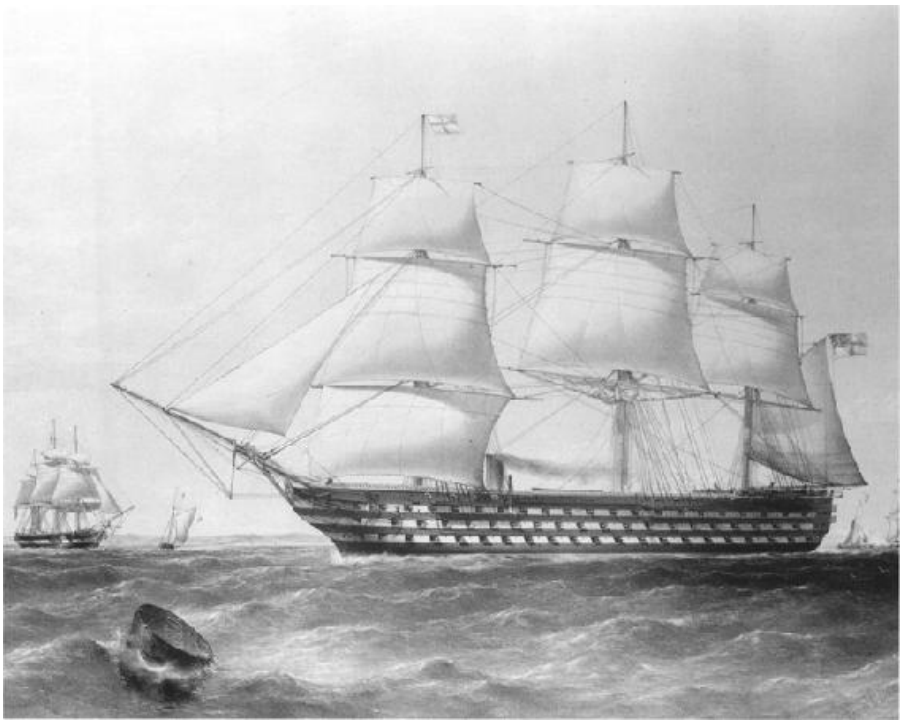


A midships section, looking aft, of the *Duke of Wellington* drawn in July 1853 at Portsmouth where she was fitting out. It shows the position of the 780nhp machinery in the hold below the orlop deck, flanked on each side by purpose-built bunkers for coal. The 2-cylinder horizontal single expansion engine had actually been built by Robert Napier & Sons for the unsuccessful iron-hulled frigate *Simoom*; it developed 1979ihp on trials to give a measured speed of 10.15 knots. Many smaller details are also indicated, including the exact arrangement of spare spars on the gratings, surmounted by two 42ft launches, each with a 32ft boat nested inside (a barge in the starboard and a pinnace in the port launch).
[NMM L2054]

Two brand new First Rates were ordered in April 1854 – the only First Rates to be designed and built from the start as screw-driven wooden-hulled warships – but before describing these it is necessary to complete the story of the last sailing First Rates converted to steam propulsion. In early 1854 three such ships remained on the stocks in Portsmouth Dockyard: the *Royal Frederick* (ordered as *Royal Sovereign*, and under construction since 1841), the *Prince of Wales*, and the new *Royal Sovereign;* the *Victoria* was similarly on the stocks at Pembroke Dock.

The *Royal Sovereign* would be the first to be taken in hand, with an instruction to complete her as a screw ship issued in June 1854. A similar order for the *Prince of Wales* was issued in April 1856. On 28 February 1857, the process of rationalising the remaining First Rates continued: the *Royal Frederick* (at Portsmouth) and the *Windsor Castle*

(as the *Victoria* at Pembroke had been renamed on 6 January 1855) were to be converted to screw propulsion, and fitted with 500nhp engines, but without lengthening. They would then be reduced to 100-gun ships, but in early 1858 it was proposed that both ships should be reclassed as 120 guns, still without lengthening; it was never applied, and both remained 100-gun ships. On 5 December 1862 the *Windsor Castle* was downgraded from a First to a Second Rate.

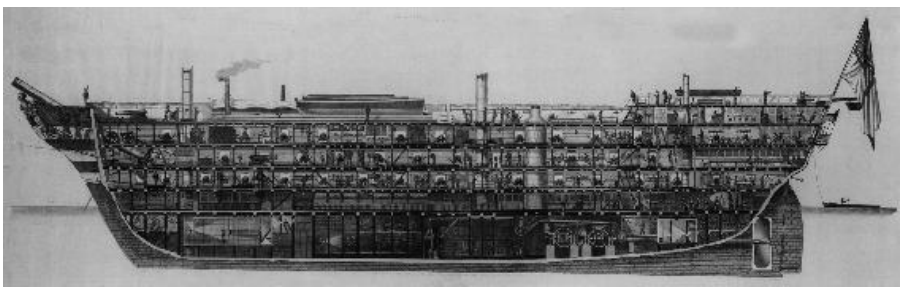


A coloured lithograph by Thomas Dutton of the *Marlborough* as newly completed. She had been scheduled to launch on 1 August 1855, and the ceremony at Portsmouth actually took place on that date, but she stuck on the slipway and it took more than a week before she actually entered the water.
[NMM PAH9269]

For the four ships re-ordered as 120-gun ships in 1848 the process of conversion involved lengthening the hull to create a compartment large enough to accommodate the single expansion engine and the associated steam boilers. The lengthening also improved the lines of the ship, raising her speed. Each ship was cut apart amidships, the after part was then sealed and launched separately, and a new midships section was built on. The after section was then dragged onto the slipway and re-attached.

On 10 August 1858 four more elderly First Rates were ordered to be cut down into 90-gun Second Rates, fitted with screws and engines of

500nhp. These comprised the *Saint George* at Devonport, the *Neptune* at Portsmouth, the *Trafalgar* at Chatham and the *Queen* at Sheerness. In addition, the *Royal Frederick* (completing at Portsmouth under previous instructions as a screw three-decker) was on 30 April 1859 ordered to cut down into an 86-gun two-decker, like the *Queen*, with a 500nhp engine; on 28 January 1860, before launching, she was renamed *Frederick William*. As a postscript to this programme, on 9 March 1860 Devonport Dockyard was instructed to completely clear out the 102-gun *Royal George*, and dismantle her fittings preparatory to cutting her down to a two-decker of 90 guns. The razee was carried out between 2 April and 4 January 1861.



THIS coloured lithograph of the *Royal Albert* by Charles Lewis Pickering was published in 1852, before the ship was completed. It is a public print rather than an official production, but its dedication 'with permission' to Sir Baldwin Walker, the Surveyor of the Navy, suggests access to official information. It is certainly replete with unusual detail, from the landing guns right forward to the admiral's lady in the great cabin aft.
[NMM 9351]

The subsequent history of those ships cut down as Second Rates upon conversion to steam has been outlined in the previous chapter, but the later histories of those conversions which became steam-driven three-deckers are given below.

Duke of Wellington

The *Duke of Wellington* was commissioned in 1853 under Commodore Henry Byam Martin, for the Western Fleet. She carried 1100 men and an armament of 131 guns; the lower deck was provided with ten shell guns of 8-inch/65cwt type and twenty-six solid-shot guns of 32-pounder/55cwt type; the middle deck carried six more shell guns and thirty more 32-pounders of the same weights. There were thirty-eight solid-shot guns of 32-pounder/40cwt type on the upper deck, and twenty 'gunnades' (shorter than a long gun but longer than a carronade) of 32-pounder/25cwt type on the quarterdeck. In addition, a single solid-shot gun of 68-pounder/95cwt model was added on a pivot as a bow-chaser.

The ship saw active service during the Russian War. In 1854 she was under Captain George Thomas Gordon, as flagship of Sir Vice-Admiral Charles Napier and sailed for the Baltic on 11 March 1854. In early 1855 she was under Captain Henry Caldwell, as flagship of Rear-Admiral Richard Saunders Dundas, again sailing for the Baltic. By 1856 she had moved to the Mediterranean, but returned to Portsmouth and paid off later that yean She recommissioned in May 1863 under Captain John Seccombe, as a receiving ship at Portsmouth. In 1869 she recommissioned as the flagship of Sir James Hope, and remained in the role of flagship at Portsmouth until the end of the century. She was sold to Messrs Castle at Charlton for breaking up on 12 April 1904.

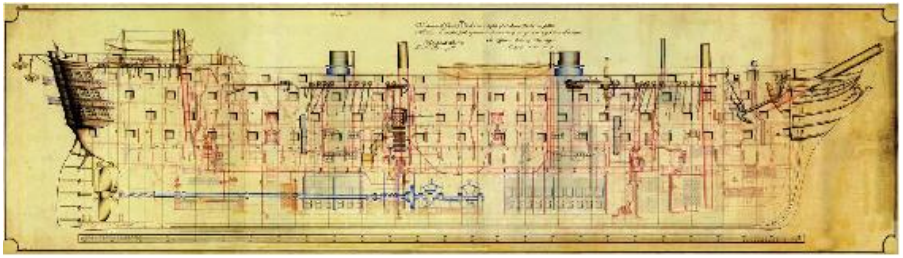
Marlborough

The *Marlborough* was commissioned in February 1858 under Captain Lord Frederick Herbert Kerr, as flagship of Vice-Admiral Arthur Fanshawe for the Mediterranean. She initially carried 1100 men and the same armament of 131 guns as the *Duke of Wellington*, but this was subsequently reduced to 121 guns, similar to that in the new *Victoria* and *Howe*. In April 1860 she was under Captain William Fanshawe Martin, flying the flag of Rear-Admiral Sydney Colpoys Dacres. In 1864 she paid off into Ordinary at Portsmouth, as a 121-gun ship; by 1870 her armament had been reduced to 98 guns, and in 1875 to 74 guns. She was eventually sold in 1924 for breaking up, but capsized off Brighton while en route to the breaker's yard.

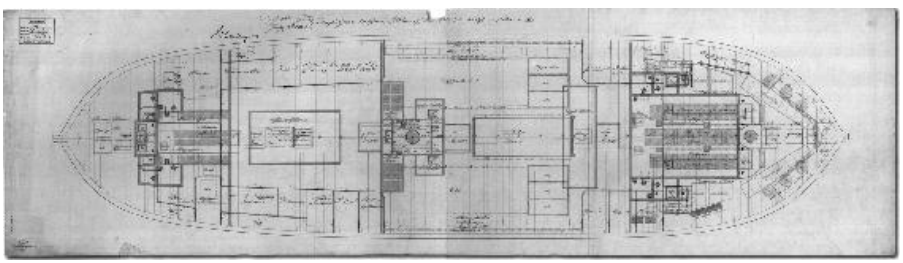
Royal Albert

The *Royal Albert* – the only three-decker of the last generation not to have originated as a *Queen* class design – was launched on 13 May 1854, departing the next day for Sheerness, where she completed fitting for sea on 19 November. Her hull had cost £111,865 to build, and her (Penn) machinery £31,983; altogether her building and fitting totalled £174,345. Over the following week, she completed fitting for troops at Portsmouth.

She was completed with 121 guns – thirty-two 8-inch shell guns (of 65cwt and 9ft length) on the lower deck, thirty-two 32-pounder MLSB guns (of 56cwt and 9½ft length) on the middle deck, and an equal number of 32-pounder MLSB guns (but of 42cwt and 8ft length) on the upper deck; the quarterdeck and forecastle carried another twenty-four of the 42cwt MLSB guns, as well as a single 68-pounder MLSB gun (of 95cwt and 10ft length) on a pivot mounting on the centreline.



A detailed draught of the *Victori* shows the location of the single expansion engine and the eight boilers in the ship's hold. As a consequence of this the foot of the main mast could not be sited in the hold, as was the case in the pure sailing vessels, but was stepped on orlop deck above. There are sixteen ports along the broadside on each the three principal decks, plus chas ports. The two ships built to this design were the last three-deckers to be built and the only class designee from the start to have steam propulsion. In April 1861 the Howe of Commons adopted a motion ending the construction of woodenhulled capital ships. It marked the end for the three-decker and closed an era that began over 250 years earlier.
[NMM L2053]



As the nineteenth century progressed, the pace of change increased and as each ship became ever more different from its predecessor, so the builders required more information. There were more and more innovations to be represented on draughts, and this led to more complicated plans, with the greater use of multi-coloured inks. This plan of the orlop for the *Trafalgar* of 1841 is dated 1845 and shows the exact fittings below the waterline as actually completed. Not only are more details represented, but they are also heavily labelled and annotated, suggesting that items on a draught like this would not necessarily be self-evident, even to professionals.
[NMM J1836]

Commissioned initially under Captain Thomas Sabine Pasley, with the Channel Fleet, but in November 1854 she was under Captain William Robert Mends, for the Black Sea squadron, where she became the flagship of Rear-Admiral Sir Edmund Lyons in February 1855. She took part in the Anglo-French attack on the fortress of Kinburn (at the mouth of the Dnieper) on 17 October 1855. On returning to the UK, she became the command of Captain Henry James Lacon, as flagship of Sir Charles Howe Fremantle in July 1858 in the Channel She paid off at Plymouth on 20 December 1860, and remained there (as a 107-gun ship) until she was sold to Messrs Castle in September 1884 for breaking up.

Royal Sovereign

The *Royal Sovereign* had been built at a cost of £113,165 by the time of her launch in April 1857, but she saw no service as a three-decker, even after conversion to screw. She was fitted with Maudslay machinery (which cost £49,300) in June-July 1857, and was then fitted for the Second Class Steam Reserve for another £16,079, and then remained in Ordinary for nearly five years. In January 1862 it was decided to cut her down and complete her as an ironclad 'frigate', with 5½-inch armour over the belt and conning tower, and carrying five 150-pounder MLSB guns fitted in four revolving turrets (one twin). The classic encounter between the *Monitor* and *Merrimack* in Hampton Roads in March 1862 gave encouragement to the decision. On 4 April 1862, an order was issued for the *Royal Sovereign* to be converted in this way, and the work was done between April 1862 and August 1864. The design was the inspiration of Cowper Coles, the advocate of the turret system, but the need to keep the firing arcs clear of rigging meant that she carried only a minimal sail plan – enough to steady the ship but hardly adequate to propel her. In an age when coaling stations had not been established, this meant that she had a very short operational range and was effectively confined to a coastal defence role. She saw no active service, and was finally sold for breaking up in May 1885.

Prince of Wales

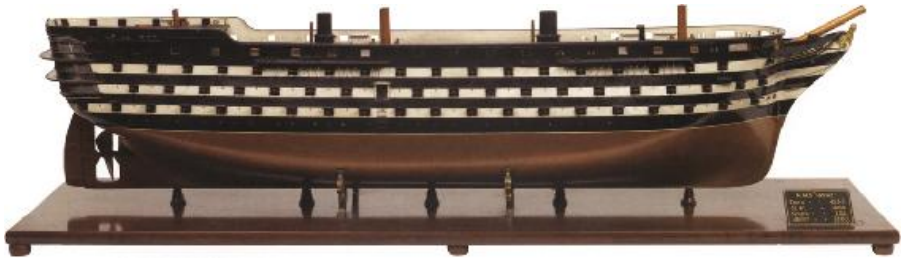
Building the *Prince of Wales* as a sailing vessel had cost £47,116. Her conversion to a screw battleship brought the total up to £116,847, but, again, this ship was never to see active service. On 3 March 1869 she was renamed *Britannia*, to serve as a boys' training ship in the River Dart. She was commissioned in August 1874 under Captain William Graham. In August 1877 she was commanded by Henry Fairfax, then from 1880 by Richard Wells. In September 1889 she recommissioned under Captain Noel Stephen Fox Digby, then again in February 1900 under Captain Michael Pelham O'Callaghan. In 1904 she was at the Royal Naval College. She was hulked in 1909, and sold to Garnham for breaking up in November 1914; they re-sold her to shipbreakers Hughes Bolckow, and she arrived in July 1916 at Blyth to break up.

THE 1854 NEWBUILDING PROGRAMME – THE *VICTORIA* (1859) AND *HOWE* (1860)

The 1854 Programme of Works made provision for two new First Rates, each to carry 120 guns and 1000 men, and to be built at

Pembroke and Portsmouth. A design was produced that November, and construction was given the go-ahead by the Admiralty on 27 December, and they were named *Howe* and *Victoria* on 5 and 6 January 1855 respectively, when the design for them was approved. These were the only purpose-designed steam-powered three-deckers to be built for the navy. They were to have engines of 1000nhp, contracted with Penn and Maudslay respectively. Uniquely in the British steam battlefleet, they each had eight boilers, arranged four forwards and four aft of the engines, each boiler-room leading up to its own funnel, again making these the only two-funnelled ships in the wooden battlefleet. On 6 March 1858, however, it was proposed that the run of *Howe*'s bow should be lengthened by some 15ft to improve her lines; by this was meant not lengthening the hull overall, but refining the lines so that they began to taper towards the bow 15ft further aft than previously. However, the breadth was increased by a foot. This was agreed in April and resulted in her gaining an additional 120 tons in burthen.

THE *Victoria* under full sail shows a clean profile – the final image of the First Rate with the quarterdeck and forecastle now merged into a continuous fourth deck (which acquired the term 'upper deck' from the tier below, the latter becoming known as the 'main deck'), although the waist still carried no guns at this level. While she was fully rigged, her 1000nhp Maudslay machinery produced 4293ihp on trials in Stokes Bay, to give a speed of 13.14 knots. Watercolour by Mackenzie Thomson, made at the end of the ship's sea-going career in 1867.
[NMM PW7812]



THIS model of the *Howe* of 1860 shows the two-funnel arrangement of the uptakes from her eight boilers, four forwards and four aft of the Penn 1000nhp machinery. On trials at Plymouth, this produced 4564ihp to give her a speed of over 13.5 knots – making her the fastest First Rate of all time. The model clearly shows the open galleries at the stern, and below them the single screw. The hull is shown pierced for 140 guns – 70 on each side (not counting the pivot-mounted 68-pounder in the bows). There are twenty gunports on the lower deck, eighteen on the middle deck and eighteen on the third tier (now 'main deck'). In practice each of the class was established with just 94 guns on these three decks. On the model the quarterdeck has eight pairs of gunports (the *Victoria*'s draught shows a ninth pair, not visible on the model) and the forecastle five for the lightweight (42cwt) 32-pounders on this level.
[NMM F7867-1]

The armament was to follow the previous pattern. The lower deck was provided with thirty-two shell guns of 8inch/65cwt type, with thirty more of the same calibre on the middle deck. There were thirty-two solid-shot guns of 32-pounder/58cwt model on the main deck, and twenty-six more 32-pounder/42cwt guns on the upper deck. In addition, a single solid-shot 68-pounder/95cwt, fitted on a pivot mounting on the forecastle, was added as a bow-chaser.

The *Victoria*, following her launch, was fitted for Reserve, completing as such on 20 April 1860. She was commissioned in April 1863 as the flagship of Rear-Admiral Robert Smart for the Mediterranean. Captain James Graham Goodenough assumed command in November 1864. In 1866 command passed to Captain Alan Gardner, as flagship of Vice-Admiral Lord Clarence Edward Paget, still in the Mediterranean. In 1867 she was at the 17 July Review at Spithead, now with the flag of Admiral Sir Thomas Sabine Pasley. The *Victoria* remained at Portsmouth from 1870 to, and was finally sold for dismantling in May 1893.

After launch at Pembroke, the *Howe* was moved on 4 April 1860 to Devonport, where she completed fitting machinery on 16 August, at a cost of £62,500. She then remained at Plymouth for nearly thirty years, being renamed *Bulwark* on 3 December 1885 (the name *Howe* was re-assigned to a new battleship of the 'Admiral' class), when she was adapted for harbour service as a training ship for boys at Plymouth; on 27 September 1886 she was further renamed *Impregnable*, and remained in this role until the end of the First World

War. On 1 December 1919 she resumed the name *Bulwark*, but was sold to Garnham to break up on 18 February 1921.

On 24 January 1860 the Admiralty made its last alterations to the definition of the various Rates. They wrote to the Surveyor instructing him that (among changes to other Rates) the First Rate was to comprise all ships carrying 110 guns and upwards, or the complements of which consisted of 1000 men and upwards.

In October 1861 HMS *Warrior* entered service. She was the world's first iron-built seagoing armoured ship, and although she carried so few guns that she was rated as a frigate, she marked the beginning of the end for the First Rate. For 250 years the spearhead and symbol of British naval power had resided in huge three-decked floating fortresses, the largest, most complex and most costly moving structures of their day, but they were to be replaced by ships of a different order of power – compared with her wooden squadron-mates *Warrior* was aptly described as 'a black snake among the rabbits'. The supremacy of the First Rate was not ended overnight, but their aura was gradually tarnished as these once-powerful ships lingered on for decades in ever more degrading subsidiary roles, before facing the ultimate indignity of the breaker's yard. For those who mourned their passing, J M W Turner provided a prophetic expression of that nostalgia in his famous painting 'The Fighting Temeraire tugged to her last berth to be broken up' – although executed in 1838, his portrait of the old three-decked Trafalgar veteran only gained in popularity as the era of the wooden walls receded until in one twentieth-century British poll it was voted the nation's favourite painting.

The *Duke of Wellington* Class (131 guns) – construction history

VESSEL	BUILDER	RE-ORDERED	BEGUN	LAUNCHED	FATE
Duke of Wellington[1]	Pembroke Dyd	29. 6.1848	5.1849	14. 9.1852	Hulked 1863; sold 12.4.1904
Marlborough	Portsmouth Dyd	29. 6.1848	1. 9.1850	1. 8.1855	Sold 10.1924
Royal Sovereign	Portsmouth Dyd	29. 6.1848	17.12.1849	25. 4.1857	Sold 5.1885
Prince of Wales	Portsmouth Dyd	29. 6.1848	10. 6.1848	25. 1.1860	Hulked 9.1909; sold 13.11.1914

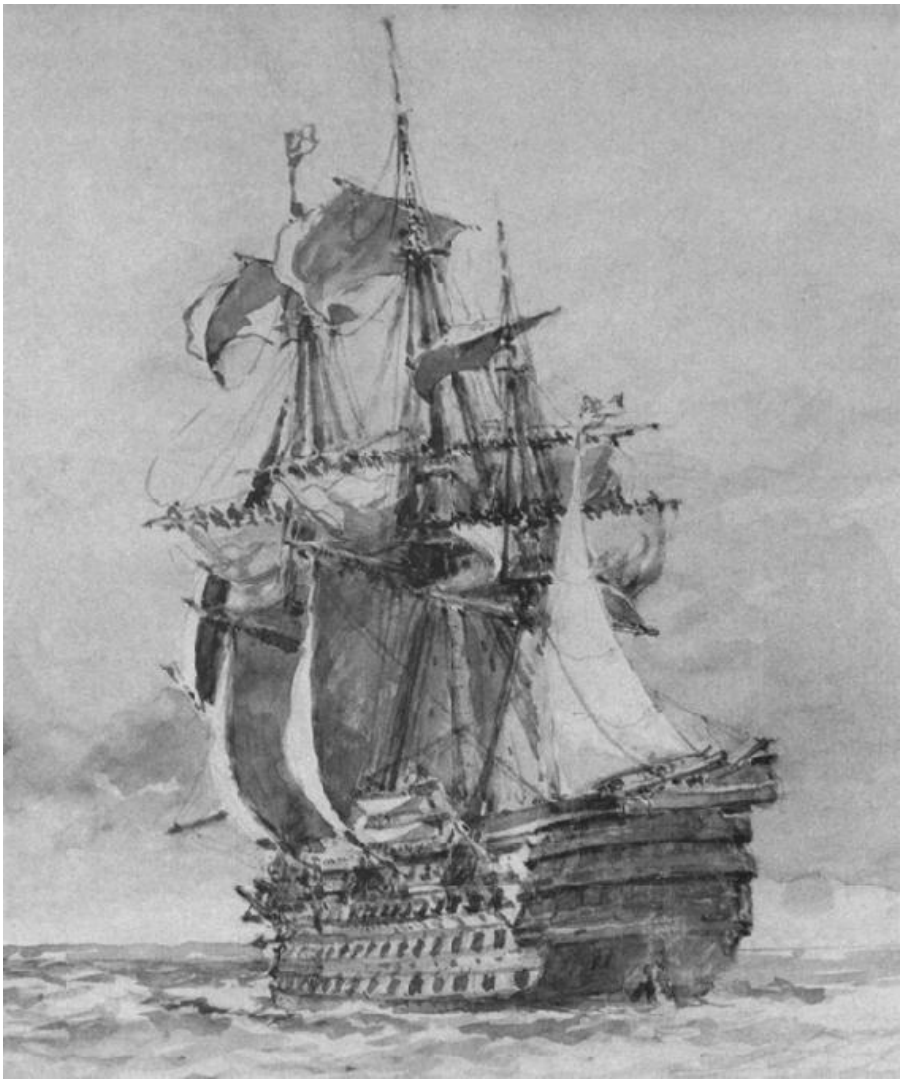
[1] Formerly *Windsor Castle*, renamed 1.10.1853 (after launch)

VESSEL	CONVERSION ORDERED	CONVERSION BEGUN	AFTER PART LAUNCHED
Duke of Wellington	19. 1.1852	19. 1.1852	7. 2.1852
Marlborough	30.10.1852	29.11.1852	22. 1.1853
Royal Sovereign	23. 5.1854	21. 5.1855	30. 6.1855
Prince of Wales	9. 4.1856	27.10.1856	17.12.1856

The *Duke of Wellington* Class (131 guns) – dimensions in feet and inches

VESSEL	GUN DECK	KEEL	BREADTH*	DEPTH	TONS
Design (sail)	210 0	171 1	60 0	24 8	3185 $^{63}/_{94}$
Design (steam)	240 7	201 11½	60 1	24 8	3771 $^{39}/_{94}$
– as completed:					
Duke of Wellington	240 5	201 8	60 0	24 8	3759 $^{84}/_{94}$
Marlborough	245 5	206 3⅞	61 2½	25 10	4000 $^{18}/_{94}$
Royal Sovereign	240 7	201 11⅝	60 0½	25 4	3765 $^{80}/_{94}$
Prince of Wales	252 0	213 0	60 2½	25 2	3994 $^{18}/_{94}$

* overall breadth: the breadth for tonnage calculation is 10 in less.



FROM the beginning to the end of their history, First Rates were unhandy, demanding the highest standards of seamanship and skill: this shows sail drill in the *Marlborough*, one of the last (completed in 1858) and actually a screw-driven steamer, although, like the rest of her kind, most time at sea was spent under canvas. Wash drawing by Eduardo de Martino.
[NMM PU9587]

The *Victoria* Class (121 guns) – construction history

VESSEL	BUILDER	ORDERED	BEGUN	LAUNCHED	FATE
Howe	Pembroke Dyd	3. 4.1854	10. 3.1856	7. 3.1860	Sold 18 Feb. 1921
Victoria	Portsmouth Dyd	3. 4.1854	1. 4.1856	12.11.1859	Sold 31 May 1893

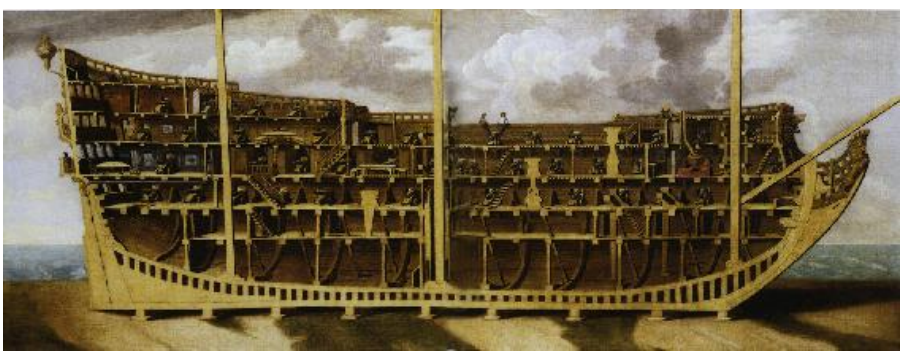
The *Victoria* Class (121 guns) – dimensions in feet and inches

VESSEL	GUNDECK	KEEL	BREADTH*	DEPTH	TONS
Design:	260 0	221 0 ¼	60. 0	26 10	4116 $^{31}/_{94}$
– as completed:					
Howe	260 0	219 10 ⅜	61 1	26 10	4245 $^{31}/_{94}$
Victoria	260 0	221 0	60 1	26 10	4126 $^{75}/_{94}$

*overall breadth; the breadth for tonnage is 10in less.

CHAPTER 9

Arrangements



THIS painting by Thomas Phillips of a cross-sectional profile through a First Rate dates from 1701, although it represents the practice of at least a decade earlier – as in the diagonal transverse braces in the hold. It shows clearly the rising tiers of decks, the lowest (above the hold) being the unarmed orlop deck; lying at or close to the waterline, this has no apertures for gunports or indeed little in the way of permitting the entry of fresh air into the lower parts of the ship. Used primarily for storage (a few lucky warrant officers also had permanent cabins at this level), it had a low height but was also fairly protected from gunfire damage in action. The three levels above are for descending calibres of guns, with the heaviest guns (either 42-pounders and 32-pounders) on the lower deck, lesser weapons (culverins, later replaced by 24-pounders) on the middle deck, and smaller ones (demi-culverins, later replaced by 12-pounders) on the upper deck, where the guns amidships stand exposed to all weather. Dominated by the heavy guns, all cabins on these decks were temporary structures, designed to be swiftly dismantled when the ship prepared for action. Up a further level from the upper deck, the forecastle carries a pair of long-barrelled 6-pounder 'chasers' facing forward, while the quarterdeck houses more 6-pounders, and there is a further pair of 6-pounders stationed on the poop.

Study of this illustration reveals many fitting details never shown on draughts: the painted panelling of the senior officers' cabins, with small-arms and navigational instruments displayed; a large circular table in the steerage, forward of the great cabin, where the admiral entertained and held councils of war; the whipstaff arrangement for steering; small cabins between the gunports on the upper deck; square pump dales amidships; a double capstan amidships with a new-style drumhead above the older form in which the capstan bars went right through the shaft; and forward on the upper deck a brick galley furnace and its copper cauldron.

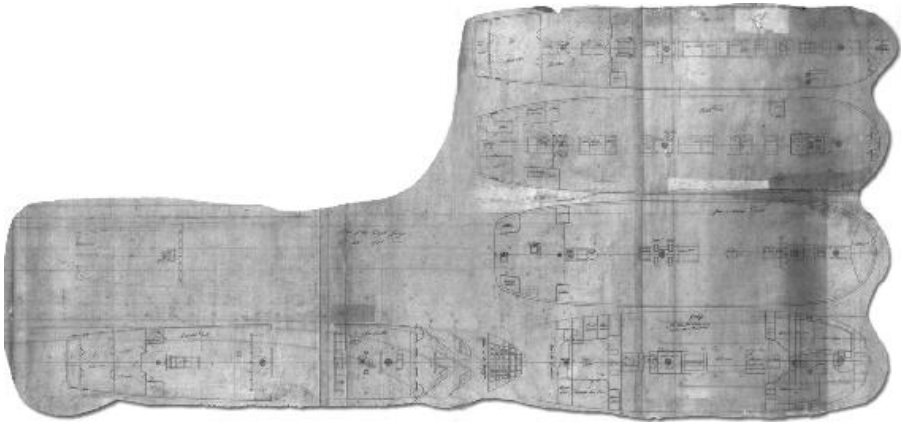
This chapter is merely an overview of the internal layout of a First Rate – where its officers and ratings were accommodated, where the ordnance, stores and other gear were to be found, and so forth. Clearly there were many detail developments over the two and a half centuries between the launch of the *Prince Royal* and that of the *Howe*, so the descriptions must be taken as generalised; but the basic layout of the three-decker was to remain remarkably consistent throughout this long period. Many of the incremental improvements can be best appreciated by a study of the individual plans and profiles contained in this volume.

Starting from the lowest level, the capacious hold was required to contain the supplies to provide for nearly a thousand men (over a thousand in the case of the *Victoria* and *Howe*) together with their personal belongings, but it also held a deep layer of ballast covering the whole bottom of the ship. The ballast usually comprised pig iron with a shingle covering, its purpose being to bring the ship's centre of gravity down and maintain its stability The weight of the masts, spars and canvas aloft, and even more the weight of a hundred iron or brass guns and their carriages, required much weight to be carried in the lower part of the ship to compensate. Laid directly onto the ballast were certain bulky stores, notably the water casks and beer barrels, which bedded into the shingle. Shingle could become noisome, and when iron water tanks replaced wooden casks in the early nineteenth century, the use of shingle declined.

Certain categories of stores were kept in separate compartments to avoid contamination, including a bread room and a fish room, but in particular a closely-guarded spirit room. Much is often made of the vast amounts of alcohol to be found on a sailing warship, but it should be remembered that this simply reflected the situation on land – fresh water would rapidly become foul and fetid, whereas the beer and spirits would remain drinkable for much longer.

The ship would have two magazines in which gunpowder for charges was stored. In general, the barrels of powder were kept in the main magazine, situated forwards, while the filled cartridges into which the powder was packed were stored in the aft magazine. Both were carefully insulated from contact with anything, particularly a naked flame, which could cause the powder to explode; they were lined with fire-retardant material and the gunner was even issued with felt slippers, to avoid the risk of a spark being created. For the purpose of illumination, each magazine had adjacent to it a separate sealed-off compartment, a light room, separated by a window from the magazine itself. Entry to the light room was completely separate from that into the magazine itself; both were accessed not from the hold but only

through hatchways from the deck above, and these were constantly guarded by armed marines.



DECK plans were only intended to show the position of various fittings, so were often drawn on a single sheet, like these of the *Royal George* of 1756. This draught lacks some of the detail of the of the *Victory* decks (see page 129), but it also includes some features missing from the earlier plans – the 'seats of ease' in the head, and the palleting of the magazine, for example. Cabin joinery has been simplified in that most of the bulkheads are now straight, abandoning the baroque curves of earlier accommodation, and the small cabins between gunports have been reduced to a pair on each of the upper and middle decks. The platforms in the hold are indicated in red on the orlop plan.
[NMM J1935]

A model of a section of the *Royal George* of 1756 under the quarterdeck showing one vertical tier of guns and their tackles. Note that the ports are staggered vertically, so they do not fall one above another; each port was a potential weak spot in the framing, so the stresses were spread evenly. Above the ports are additional tackles used to open the gunport lids. The model also accurately depicts the thickness of the hull, and demonstrates the prominent hanging knees that fastened the beams to the hull sides; there are also similarly shaped knees fitted in the horizontal plane (called lodging knees), but these are more difficult to make out.

The most radical change in the use of this level took place with the introduction of steam screw propulsion, and this only affected the three-decker during the final decade of its development. The tremendous weight and volume of the early steam reciprocating engine and its associated steam boilers, together with the vast amounts of coal required to fuel those boilers, could only be accommodated low down in the ship, and thus required to occupy the majority of the space available in the hold; indeed, the height of the machinery was such that it reached above the level of the orlop deck, thereby diminishing the space available there.

The deck above the hold was the orlop, the only deck where there were no ports to provide air or illumination, because it was level with (and often, in a fully loaded ship, below) the waterline. Midships on this level were to be found the cable tiers, stowage for the miles of spare cables which the First Rate was required to carry. Here too would be found the sea-chests and other bulky belongings of the seamen and marines. A separate compartment was the sail room, where the spare sails and extra canvas would be stored. Forwards from the cable tiers were found the small cabins for the boatswain and carpenter adjacent to the ship's sides, and then stretching into the bows were the storerooms for the multitude of items which were the responsibility of these standing officers.

THE vast majority of a First Rate's interior was given over to three complete gundecks, which doubled as accommodation space for most of the crew. This section of the *Queen* (1839) at the main mast shows the mess tables and benches rigged between the guns, and the racks on the hull sides for the seamen's messing equipment. A seventeenth-century sailor would have been entirely at home in this environment, although he might have marvelled at the stud-link chain that had replaced the anchor cables.
[NMM D7870]

The after part of the orlop deck was the cockpit, home to the midshipmen and to the various assistants to the warrant officers – master's mates, surgeon's mates and perhaps those of the gunner, boatswain and carpenter. While this level was illuminated only by artificial light (candles), it may be appreciated that at least the bulkheads here could be solid, and cabins on this level were permanent structures which did not have to be taken down in action. Among those officers privileged enough to have their own small

cabins on this level would be the surgeon, perhaps some of the junior lieutenants, and the purser, who had his cabin directly over the spirit-room, the only access to the latter being through this cabin, to which the purser alone retained a key. The surgeon's cabin (and his small storeroom next to it) had a practical location in that during action the cockpit served as his operating theatre, where the surgeon and his mates struggled to amputate smashed limbs and staunch wounds.

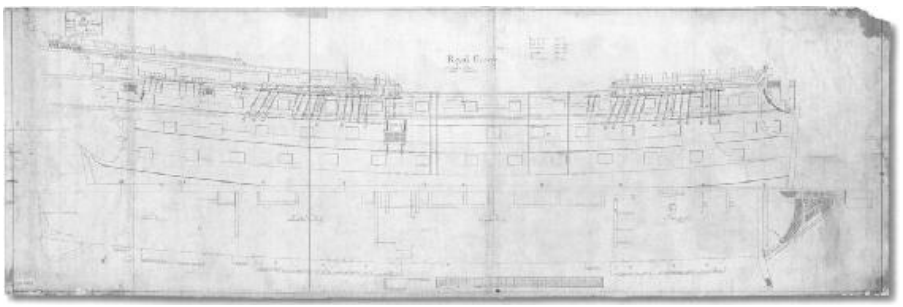
Above the orlop was the first of the gun-bearing decks – the lower deck – traditionally called the gundeck, although for clarity in this book the latter term is used to describe all the three continuous gun-bearing decks. Here were to be found the heaviest of the ship's muzzle-loading cannon – 42-pounders (originally called 'cannon-of-seven') or 32-pounders ('demi-cannon'). These were ranged along each side, each inboard of its own gunport and mounted on a carriage with four solid wheels ('trucks').

Above and between the guns the ordinary seamen and other lower ratings who formed the bulk of the ship's company had to find the space to eat, sleep and pass much of their off-duty lives. They were divided for the purpose into 'messes', each mess of up to eight men eating together around a wooden table which when not required could be hoisted to the underside of the deck above. The men's hammocks were likewise slung from hooks in the underside of the deck above, suspended in fore-and-aft rows just 14 inches apart (although it should be appreciated that with half the crew on watch at any one time, a careful allocation of the watches into alternating hammocks meant that the usable width was 28 inches much of the time). When not in use the hammocks and the bedding within them were regularly taken to upper levels for drying and airing, an essential process given the perpetual damp and fetid air in which the men lived (in anything close to rough weather, the gunports on this level remained shut). From the eighteenth century, rolled hammocks were stowed along the top of the weather deck rails and barricades where, in action, they provided some protection against small-arms fire.

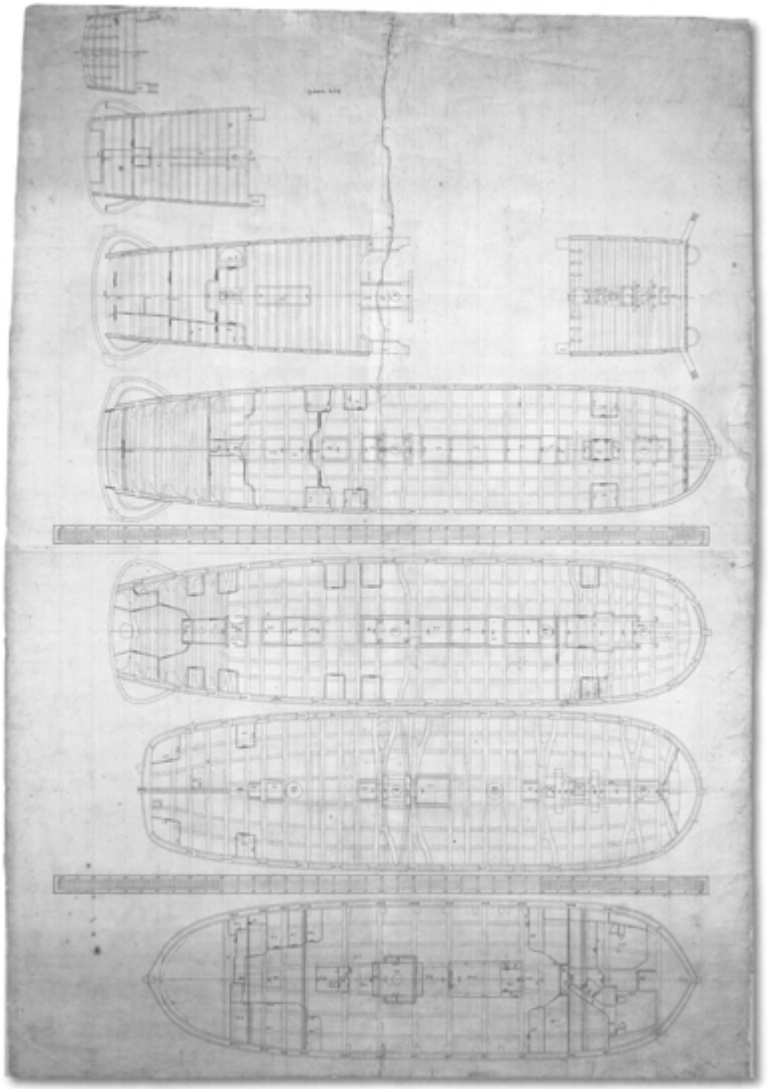
Aft on this lower deck were the gunroom cabins, home to the gunner and other warrant officers. Although these compartments were separated off by thin panels, they were not permanent; in action all these compartments (and those situated in the decks above) had to be knocked down to provide unimpeded movement between the guns. At the other end of the lower deck, towards the bows, a low wooden wall, several feet high, separated off the bows. The wall served to retain water entering through the hawse-holes, ports in the sides through which anchor cables could move when a ship was raising or lowering its anchors; a secondary function of this wall was to provide accommodation for the livestock carried aboard – this compartment

thus being termed the ‘manger’. Inevitably, the animals lived in even worse condition than the humans aboard, not infrequently being drowned by heavy seas surging through the hawse-holes, until such time as they were butchered for the crew’s fresh food.

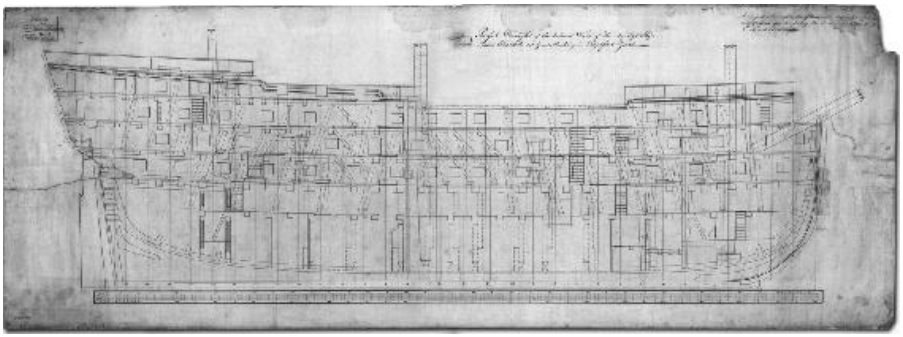
Up another level was the middle deck. Again the major part was occupied by the serried rows of carriage-mounted guns along each broadside, now being somewhat smaller calibre weapons – 18-pounders or subsequently 24-pounders. Again much of the spare space was occupied by the accommodation for the lower ranking members of the crew, but room was also found (when not at action stations) for the workshops of the various artificers – the carpenter’s aides, the blacksmiths, caulkers, sailmakers and armourers – all generally, and rather unfairly, termed ‘idlers’ because their duties meant that they did not have to stand a watch like the seamen.



THE surviving Admiralty Collection of plans probably represents only the central records of the Surveyor’s Office, and it is likely that the construction of each ship required many more ‘working’ plans that were seen as ephemeral and destroyed once the ship was completed. This unusual plan of the *Royal George* (1756) may be one, in that it it only concerned with specific external fittings – the great cabin lights on the broadside, and the entry port seem particularly detailed, as does the framing of the head. Only the weather decks are indicated on the profile, which is married to a half-breadth plan view of the same decks, with the channels drawn on, so it may have been also have been intended to work out the exact positions of the deadeyes and chain-plates.
[NMM J1933]



THE plans of the deck levels of the *Victory* of 1737 are arranged in descending order, with the topgallant poop at the top providing a roof above the roundhouse, then the roundhouse deck (showing gunports for three pairs of small guns). Next is the level of the quarterdeck and forecastle, being followed by the upper, middle, lower and orlop decks. Each plan shows the transverse beams below the deck planking as well as the positions of the main deck fittings – capstans, bitts, hatches and companionways. Partitions for the various cabins and storerooms are indicated (most complex on the orlop where no consideration needed to be made for gunports), and an interesting feature are the small cabins still shown between ports on the gundecks – one of the last ships to have them in any number.
[NMM J1841]



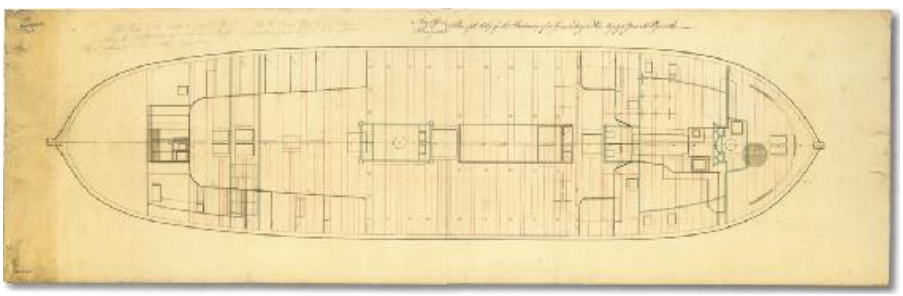
THE layout of 'inboard works' was sometimes represented as red lines on the external sheer plan, but eventually a separate profile draught was produced, like this one for the second *Queen Charlotte*. By this date, many internal features were standardised and the draught needed little specific detail. The diagonal rectangles in dashed lines are top riders, which were in vogue during the 1790s – additional strengthening pieces fitted over the internal planking, they were eventually judged counter-productive as they produced local strength but transferred the stresses to other less rigid parts of the hull, where they did disproportionate damage; they were abandoned by Admiralty Order of 1806 and thereafter usually removed on refit. [NMM J1996]

Centrally placed among the row of gunports on this level was the entry port, primarily for use in harbour. This amounted to a complete door in the side of the vessel, to avoid the necessity of less agile visitors having to climb the complete side of the ship in order to clamber over the bulwarks. At sea, this entrance could be replaced by a standard gunport. In early three-deckers there was a single entry port, conventionally positioned amidships on the port side; later First Rates also had a corresponding entry port on the starboard side.

Further aft on this level was the wardroom, the preserve of the ship's lieutenants and of certain senior warrant officers 'of wardroom rank' (a jealously-guarded status), while ranged along its sides were their individual cabins. Situated on the outside of the ship here were the quarter galleries, that on one side being for the first lieutenant, while the other side was shared by the other wardroom occupants. These two galleries provided some privacy for the lavatory facilities of the wardroom inhabitants. The forwards end of the middle deck housed the ship's galley, where the cook and his assistant provided the catering for the entire crew; usually this had a brick floor as a precaution against fire, and was fitted with a chimney which carried galley smoke up to the open forecastle. Early stoves were little more than giant cauldrons set on brick firehearths, but iron stoves were introduced from the middle of the eighteenth century.

The upper deck was the highest continuous deck, generally housing the third-largest calibre guns. The aft part of this deck contained the extensive accommodation available to an admiral; given that most

First Rates saw service primarily as flagships, the occupant of this had a separate day cabin, dining cabin and sleeping cabin. His day cabin, a sort of stateroom-cum-office, was right at the stern, and for much of the history of the First Rate gave access onto a galleried walkway where the distinguished officer might promenade in fine weather; this stern gallery was flanked by quarter galleries, one serving the same function as with that on the level below. The dining and sleeping cabins further forward were subject to the same requirement as those on the deck below: that in action their partitions and furnishings were removed to allow the operation of the one or two pairs of guns which stood within them. There might also be cabins within the admiral's accommodation for his flag captain and perhaps other members of his personal staff.



THE orlop deck of the *Britannia*, dated February 1818, shows a rationalised layout of cabins aft and of storerooms forward. Wartime experience had lead to many improvements in details (especially to magazine and powder-handling arrangements) and in 1815 a committee under Sir Thomas Byam Martin synthesised all these advances into a wide-ranging report on stores and fittings that was adopted as standard practice from 1816. Among other details was the introduction of a gratins for airing the breadroom, which can be seen in the fore peak of this draught. The layout of the platforms below is indicated in green.
[NMM J1964]

In the bows on this level, directly below the forecastle, was often situated the sick-bay, for personnel recuperating from illness or surgery. Its occupants thus benefited from fresh air but also from the warmth of the galley-chimney which passed through it. On other First Rates, such as the *Victory* (of 1765), the sick bay was on the middle deck, forwards of the galley.

Amidships on this deck was the waist, open to the weather, although over the years there was a gradual process of diminishing this opening by widening the gangways along each side of the ship linking the quarterdeck and forecastle, so that eventually it was covered by a series of gratings. In practice, much of this opening, and later the gratings, were covered by rows of spare masts and spars, on top of which were stowed the various small boats, barges, gigs, cutters

and yawls, which when required could be hoisted outboard for use.

Above the upper deck there were superstructures both forwards and aft, separated by the ship's open waist. These superstructures were the descendants of the towering castles which the medieval warship carried both forwards and aft, now much reduced in size. The structure towards the bows still bore the name of the forecastle (as it does to the present day), although it only rose a single level above the upper deck. Unlike the decks below, it did not quite reach the stem of the ship, ending in a flat transverse panel (the beakhead bulkhead). In the seventeenth century this was often two-decks high, including the middle deck, and mounted forward-firing guns, but in the early nineteenth century this bulkhead disappeared altogether, and the forecastle was extended right to the stem. The forecastle covered the forward upper deck guns, protecting their crews from the weather as well as from enemy fire. On top of it were mounted a few smaller guns (6-pounders, later 9-pounders and finally 12-pounders), usually long-barrelled – and long-range – 'bow-chasers' firing forwards over the beakhead bulkhead rails; by the eighteenth century these were the only forward-firing guns on the ship. With the introduction of the slide-mounted carronade in the late 1770s, at least one pair of these short-barrelled and primarily anti-personnel weapons were also stationed on the forecastle deck.

Above the stern end of the upper deck, the defunct after castle had now been replaced by the quarterdeck, stretching aft from the main mast for almost half of the length of the upper deck below it. Like the forecastle, this was open to the elements for the first half of its length, and carried more of the same calibre smaller guns and carronades which were on the forecastle. The aftermost part of the quarterdeck was covered by the poop deck, and in the covered section thus formed were the captain's quarters, like the admiral's below consisting of day, dining and sleeping cabins. Behind and flanking the day cabin were the stern and quarter galleries used by the captain. Immediately forwards of his dining and sleeping cabins, along the sides of the ship were smaller cabins for the captain's secretary and for the ship's sailing master – the most senior of the warrant officers. Between them, open towards the front but protected from above by the poop deck was the ship's steering position. In early ships this steering was effected by a tiller, with a pivoting vertical lever at its end called the whipstaff, but early in the eighteenth century the introduction of the steering wheel simplified matters, movement being transmitted to the tiller by a block and tackle system. In the days of the whipstaff the helmsman was below deck and in many ships could not see the sails, so the wheel offered the great practical advantage of more precise and quicker response to those conning the ship.

The poop deck served to protect the accommodation on the quarterdeck below, and in the late seventeenth century it was topped by tiny cabins against the taffrail for the ship's trumpeters; these were inflated into a 'topgallant poop' in a few ships, before being entirely abolished in the mid-eighteenth century. However, from 1780 until late in the Napoleonic era further carronades were positioned on the poop behind solid wooden barricades. Right aft was the ship's main stern lantern, and the ensign staff bearing the appropriate ensign – red, white or blue – for the flag officer aboard.

The large number of men carried by a First Rate reflected primarily the need to man its guns in action. This varied over the years, but an example from 1677 shows how the 780 men aboard a 'standard' First Rate were intended to be allocated. In 1677 three 100-gun First Rates had this establishment – the *Prince, Royal Charles* and *Royal James*. The *Britannia* had two extra guns on the quarterdeck and just two 3-pounders on the poop, while the *Royal Sovereign* was established with 24-pounders (vice culverins) on the middle deck.

It should be noted that, since a ship would rarely be engaged with enemies on both sides simultaneously, in practice a gun crew comprised the men allocated to a *pair* of guns on opposite sides of the ship – double the number per gun listed above.

Changes in the formally established guns of each First Rate can be traced through the preceding chapters of this book, but it is worth making a couple of general points. By the time of the 1703 Guns Establishment, all the lower deck guns were intended to be 32-pounders (demi-cannon of 9¾ft length) but a divergence had emerged between the larger *Royal Sovereign* and *Royal William* on one side and the smaller First Rates on the other, the *Britannia* being somewhere between the two groups (see below). The middle deck had culverins of 9½ft length and the upper deck demi-culverins of 9ft length. The table below shows the highest/lowest number of guns established, with the highest figure being for wartime use and the lowest being the normal peacetime allocation. Interestingly, under this Establishment the difference between First and Second Rates was at its most minimal, with the latter (except for the anomalous smaller *Saint Michael*) simply carrying four fewer guns of the same calibre as the First Rates.

The revised Guns Establishment of 1716 removed the small poop guns, and all First Rates were now to have fourteen pairs of guns on each continuous deck. But while the Second Rates held to their 32-pounders, 18-pounders and 9-pounders, the First Rates now carried either 32-pounders (of 55cwt and 10ft length) or 42-pounders (of 65cwt and 10ft length) on the lower deck, with the 32-pounders gradually giving way to the larger calibre; they received 24-pounders (51cwt guns of 10ft length) on their middle decks and 12-pounders

(35cwt guns of 9½ft length) on their middle decks. These differences in the *calibres* of individual guns were to remain the significant difference between First and Second Rates throughout the next century, even when the difference between the actual *number* of guns carried was fairly minute.

26 cannon-of-seven (lower deck)	182 men (7 per gun)
28 culverins (middle deck)	112 men (4 per gun)
28 sakers (upper deck)	84 men (3 per gun)
14 minions (quarterdeck)	42 men (3 per gun)
4 three-pounders (poop deck)	8 men (2 per gun)
To carry powder for all the guns	34 men
To fill and hand powder for all the guns	15 men
Chirugeon (surgeon) and his crew in the hold	10 men
Carpenter and his crew	8 men
Purser and his crew in the hold	5 men
Men for the small shot	110 men
Men to stand by the sails	120 men

The 1703 Establishment of Guns

DECK	*Royal Sovereign, Royal William*	*Britannia*	*Victory, London, Queen, Saint Andrew*	Second Rates
Lower	28/26 x 32pdr (9¾ft)	28/26 x 32pdr (9¾ft)	26/24 x 32pdr (9¾ft)	26/24 x 32pdr (9¾ft)
Middle	28/26 x 18pdr (9½ft)	26/24 x 18pdr (9½ft)	28/26 x 18pdr (9½ft)	26/24 x 18pdr (9½ft)
Upper	28/24 x 9pdr (9ft)	28/24 x 9pdr (9ft)	28/24 x 9pdr (9ft)	26/22 x 9pdr (9ft)
Quarterdeck	12/12 x 6pdr (8ft)	12/10 x 6pdr (8ft)	12/10 x 6pdr (8ft)	12/10 x 6pdr (7½ft)
Forecastle	2/0 x 6pdr (8ft)	2/2 x 6pdr (8ft)	2/2 x 6pdr (8ft)	2/2 x 6pdr (7½ft)
plus	2/2 x 6pdr (9½ft)	2/2 x 6pdr (9½ft)	2/2 x 6pdr (9½ft)	2/2 x 6pdr (9½ft)
Poop	nil	2/2 x 6pdr (7ft)	2/2 x 6pdr (7ft)	2/2 x 6pdr (7ft)

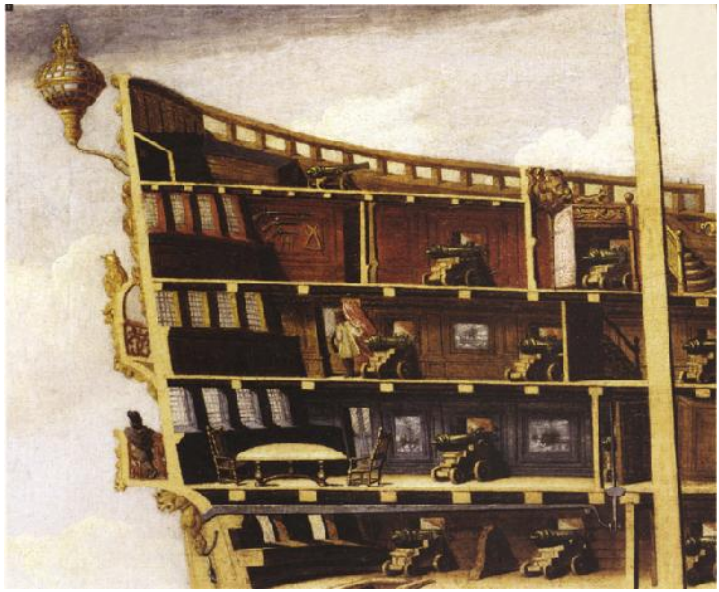
Fittings

Most of the deck fittings to be found on a First Rate were the same as those found on smaller wooden warships, although on a larger and often more complex scale. A complete history of these features would require a whole book, but the selection shown here is intended to provide a brief summary of the development of the most important or most prominent.

Steering

As ships grew larger, direct hand-on-tiller steering (as still employed in small boats) proved inadequate, so a pivoting vertical lever, called a whipstaff , was added to the end of the tiller. This gave enough leverage for normal conditions

(relieving tackles on the tiller itself were necessary in heavy weather), and allowed the steersman to stand a deck above the tiller, where originally he was able to see the trim of the sails and make minor adjustments accordingly. However, in a three-decker he was buried below decks and had to take his conning orders blind, which must have inspired the search for a method of steering from the weather deck. Curiously, no official order relating to the introduction of the steering wheel has ever been discovered, so the precise timing is unknown. An order of 1707 for the *Ossory* still specifies a whipstaff, but there is a model of a three-decker from about the same date showing an interim arrangement – a transverse steering windlass abaft the mizzen mast on the quarterdeck, where a system of blocks and tackles transfer the motion to the tiller. From here it was a simple move to turn the 'rowle' through 90 degrees and fit a more mechanically efficient wheel to the ends, allowing the operator to face forward. This soon became the familiar double wheel , partially protected by the overhang of the poop deck, but forward of the mizzen mast to improve visibility.



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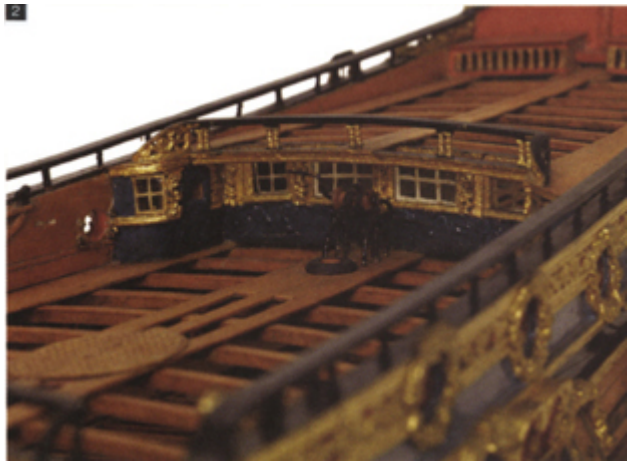

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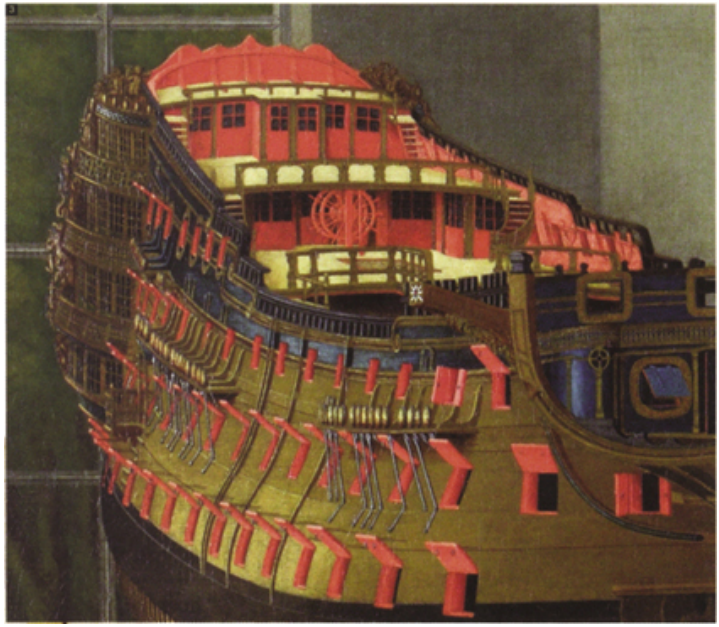


Kriegstein Collection

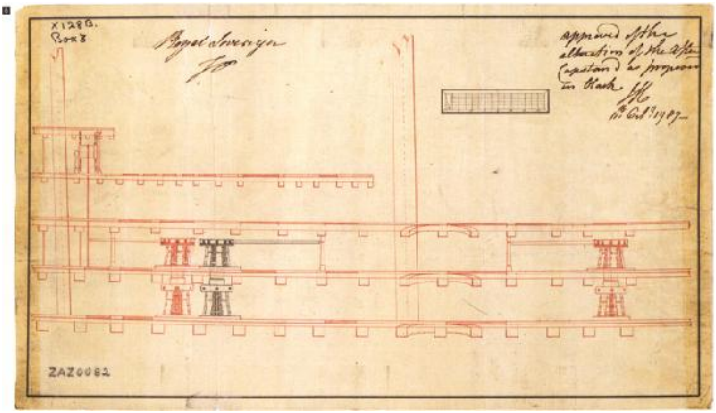
Capstan and belfry

The ship's bell, used to ring out the watches that divided the ship's day, was housed at the break of the forecastle in a belfry that remained a highly decorative little structure until the last days of the wooden warship. This example is from a model of the *Royal James* of 1671. Also visible is the early form of the capstan, in which the bars went through the shaft, resulting in bars at different levels and limiting the number that could be fitted, and hence the force that could be exerted. Raising large

anchors required great effort and a better solution was soon found in the ‘drumhead’ which fitted on top of the spindle and provided slots for more bars, all at the same height . This model of the *Royal William* of 1719 also shows the belfry moved on to the forecastle proper, with the bell attached to a wheel (like that found in church towers) so it can be rung with a bell-rope from below. Double capstans, with a common barrel through two decks, offered the advantage that the crew could man the upper one without having to step over the cable, which was brought home by the lower (which initially had no provision for capstan bars). To exert maximum effort when raising anchor, the lower part was eventually fitted for capstan bars as well, this modification being known as a ‘trundlehead’. By the mid-eighteenth century First Rates had two doubles – the fore and main jeer capstans – on the middle and lower decks and, given the wide radius of the bars, needed careful positioning – on the *Royal Sovereign* the main capstan had to be moved forward to clear the tiller ropes .

Kriegstein Collection

US Naval Academy Museum, Annapolis

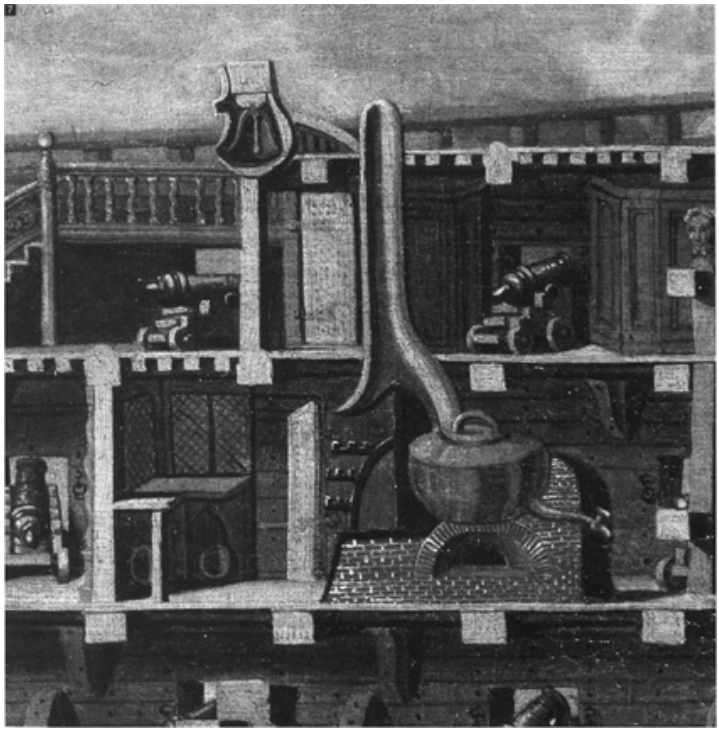


NMM J1895

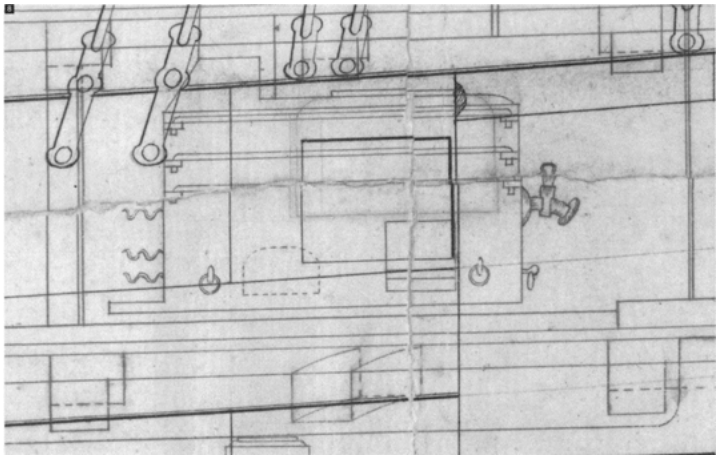
Galley

Fire was a mortal danger in a wooden ship but the crew needed hot victuals in order to work efficiently so the galley was designed and positioned with great care. In the early seventeenth century it was moved up from the hold to a position under the forecastle, or on the upper deck forward in First Rates. At first the firehearth was constructed of bricks and a huge copper 'kettle' was the principal means of cooking . In the mid-eighteenth century the heavy brick structures were replaced by iron stoves, which also offered some novel features, like a turnspit, and a more efficient oven. This was novel enough in 1761 to be specifically included on the profile draught of the *Royal George* . In the 1780s a new patented

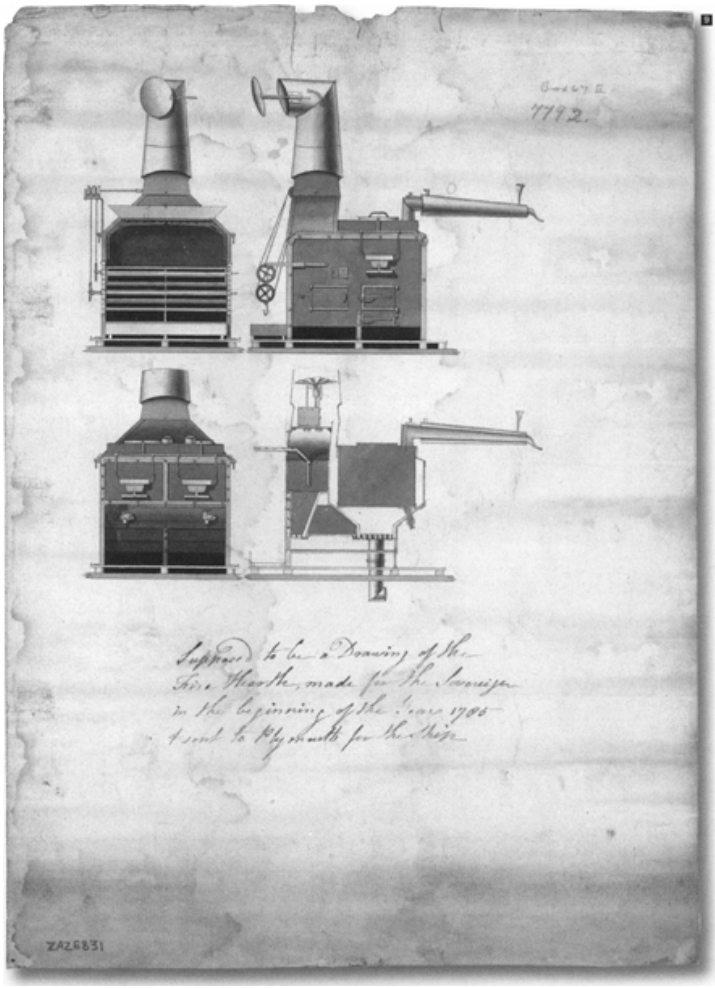
design, the Brodie stove, was introduced, this drawing being an early example fitted to the *Royal Sovereign* in 1785. It offered a greater variety of cooking styles, a controllable flue, a freshwater still, and could also provide heat to the deck below.



NMM BHC0872



NMM J1934

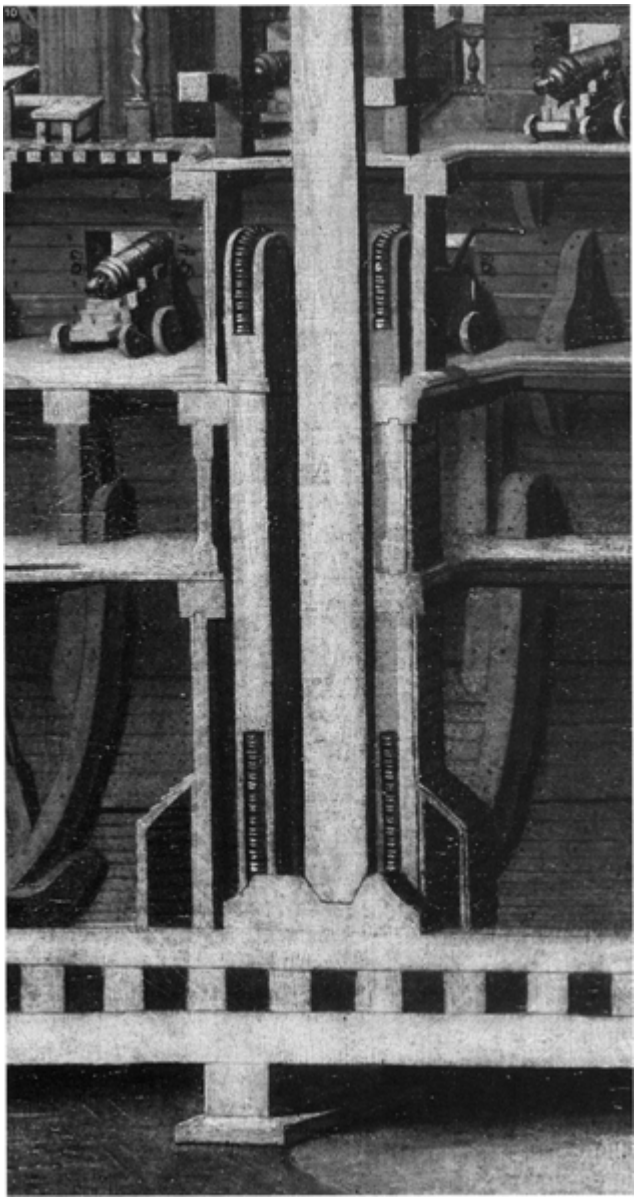

7772.
Supposed to be a Drawing of the
Fire Hearth, made for the Sovereign
in the beginning of the Year 1786
& sent to Plymouth for the Ships
ZA26831

NMM J0584

Pumps

Wooden ships always leaked and, after action or bad weather, sometimes at a substantial rate. Powerful, robust and reliable pumps were essential, and from the late sixteenth century British warships principally depended on chain pumps. These comprised a continuous loop carrying circular plates that fitted tightly into tubes running down into the bilges and back up to the lower deck, turned by a winch at the top. The space between each plate trapped water as it turned over a roller in the pump well and drove it up to the top of the casing, where it discharged on deck or into a pipe and thence over the side. They were fitted either side of the main mast, and early versions had short handles to the winches. They were subject to almost continuous minor improvement, including the fitting

of a cistern at the top, linked axles that allowed two pumps to be turned at once, and far longer crank handles that allowed up to 30 men at once to work at pumping. These features can be seen in this detail from the profile draught of the *Royal George* (1756)



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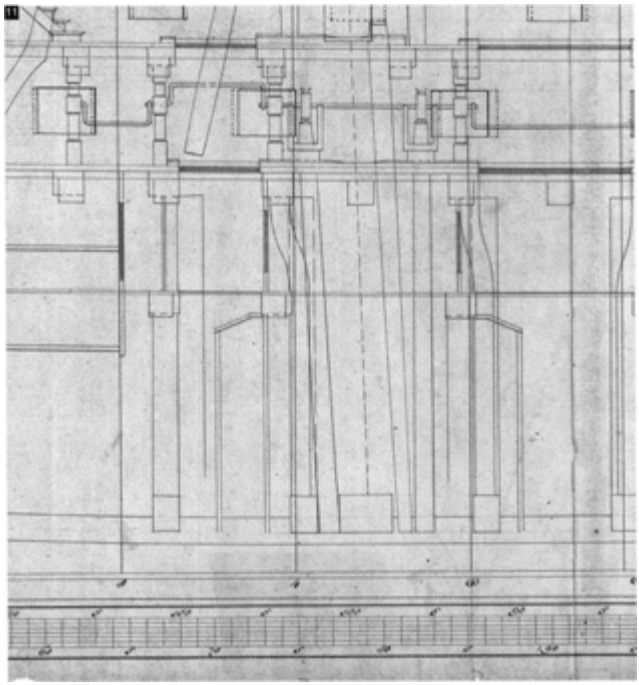
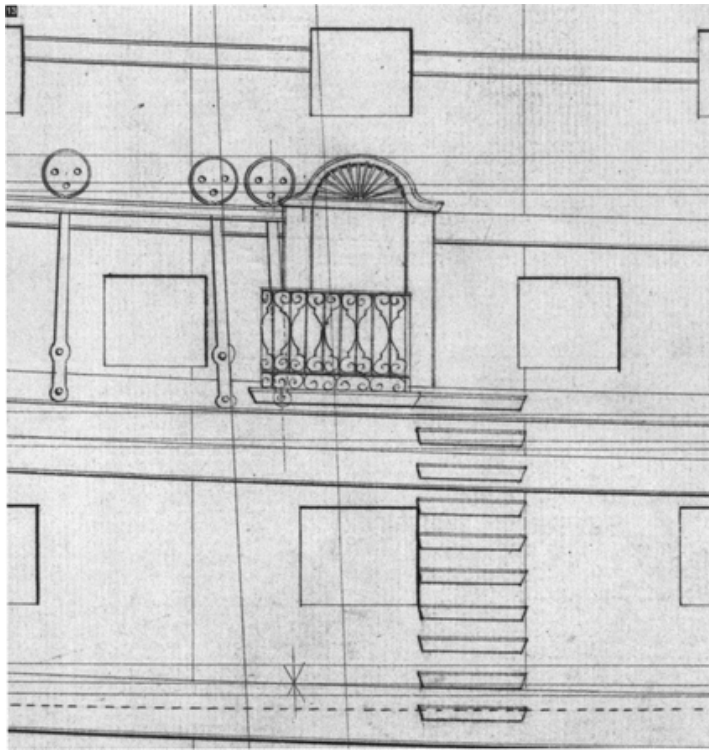


NMM J1925

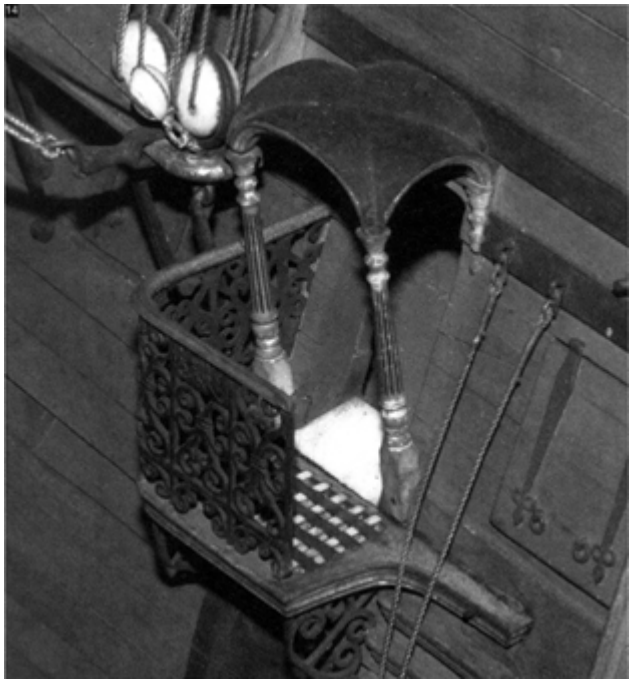
Kriegstein Collection

Entry port

As flagships First Rates were used to distinguished visitors (even if only the admirals whose flags they flew), and in order to greet them in suitable style there was always an ornate entry port at middle deck level, initially only on the port side but later duplicated to starboard also. The design varied as much as the decorative work in the rest of the ship, and these are but a few examples: *Royal James* 1671 , *Royal George* 1715 , and *Royal William* 1719 . Although they lost much of their exuberant decoration, entry ports were still to be found in the final generation of First Rates like *Howe* and *Marlborough* in the 1860s.



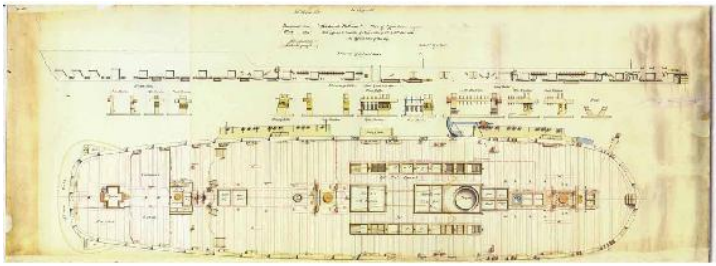
NMM J1799



US Naval Academy Museum, Annapolis

Deck fittings

Most of the minor fittings of Royal Navy warships were never recorded on draughts, but depended on a written specification or the experience of the Dockyard workers – at least until the final era of sail. This 'as fitted' plan of *Frederick William*'s upper deck, dated May 1865, shows all the bitts, pinrails, kevels, cleats and other belaying points required by a First Rate. If one ignores a few features specific to a steamer – the funnel, hatch to the 'coal hole' and propeller aperture – it might represent deck fittings for much of the history of the First Rate. Amidships, the outline of the two largest boats – 42ft launches – are indicated, and although there is no space to go into the history of ship's boats, it is worth at least noting their importance, for handling anchors and stores, for communication with shore, and for extending the reach of the ship in amphibious operations and cutting-out expeditions. From a small suite of three or four boats in the seventeenth century, the requirement expanded until it might be as many as nine in 1838 , ranging from a launch, through cutters and pinnaces to a gig, a jolly boat and a dinghy.

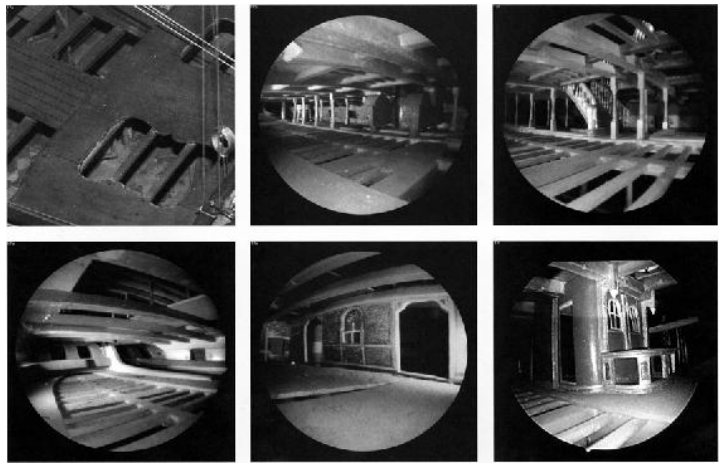


NMM L2056

NMM D6019

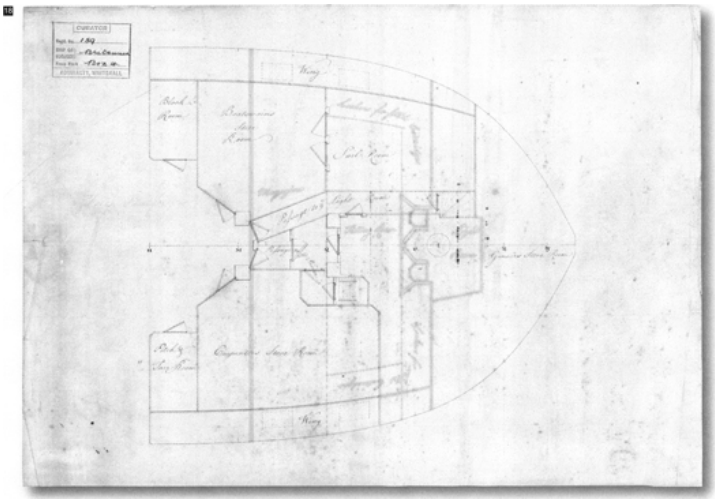
Platforms and internal arrangements

Considering that much of the interior of Navy Board models is invisible to the casual observer, it is remarkable how much detail is reproduced below-decks in many of the best examples, like the *Royal William* model at Annapolis. Admittedly, some aspects can be glimpsed through the openings left in the planking – like the flooring of the cabin on the quarterdeck – but modern investigation using endoscopes and other optical equipment developed for medical purposes has revealed hitherto unsuspected fittings deep within the hull, such as these pumps on the lower deck, the main companionway , or internal structural pieces like the gunroom standards and lodging knees . There is even highly finished decorative work in places, like the great cabin bulkhead and the steam chest and skylight .

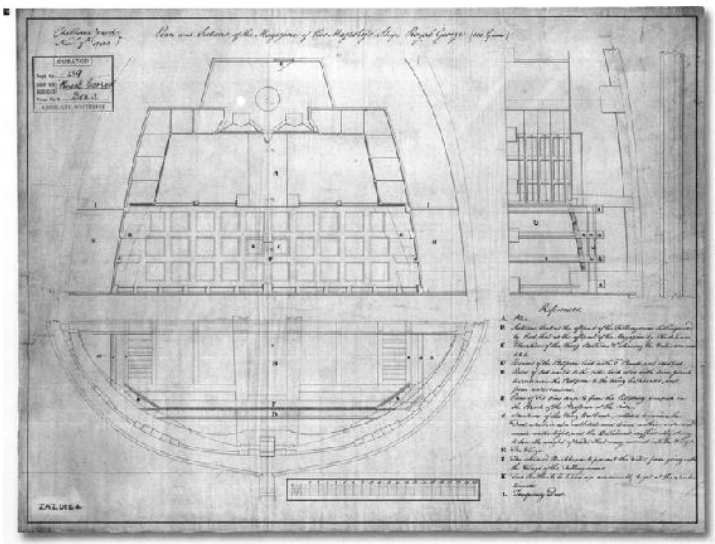


US Naval Academy Museum, Annapolis

However, the most elaborately fitted areas of a First Rate were the platforms in the hold, which carried a warren of small cabins and storerooms, and information on those depends largely on draughts. As an example, the 1762 *Britannia*'s fore platform designates, from aft: a block room (port) and pitch and tar room (starboard); boatswain's storeroom (port) with the carpenter's opposite; sail room (port); with the gunner's storeroom in the forepeak. Down the centreline are passageways to the lightroom and magazine filling room below (outlined in green). The magazine itself was the most complex of all, with a constant emphasis on improving safety. As shown in this example from the *Royal George* dated 1788 , it consisted of three parts: in the plan view 'A', from top, the lightroom, where two lanterns were kept entirely separate from the filling room, with its racks for filled cartridges around the partitions, then a step down to the powder room with its 'palleting' deck. This was a shallow false floor made up of hatches (the red squares in the plan view) under which was placed charcoal to absorb moisture and preserve the powder.



NMM J1828

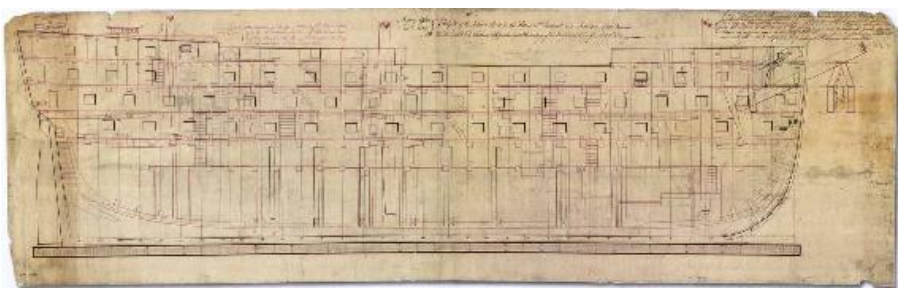


NMM J1715

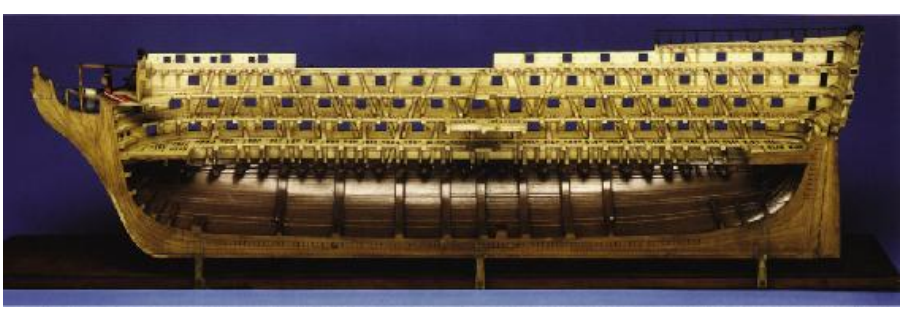
CHAPTER

10

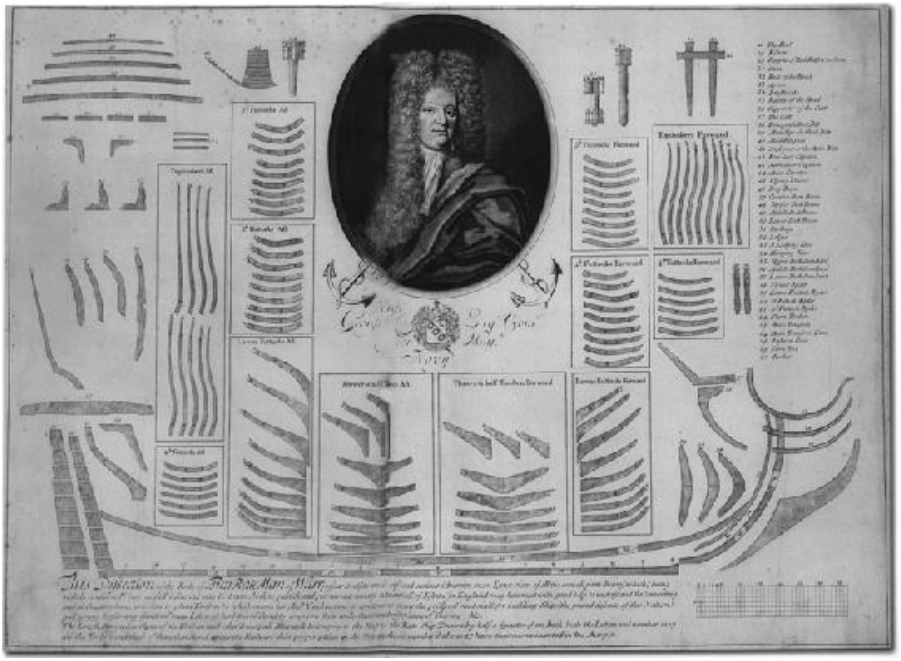
Structure



THE profile draught of inboard works for the 120-gun ships of the Surveyors' or *Nelson* class, dated January 1810. These ships were among the last three-deckers built in the conventional structural style, although the first of Seppings's innovations – the built-up 'round' bow – is indicated in green. It should be compared with a profile draught for the next generation of ships reproduced on pages 154–5.
[NMM J7864]



THE internal structure of a First Rate built according to traditional methods demonstrated in this sectional model, which was made around 1815 on the orders of the Surveyor of the Navy Sir Robert Seppings. It marries up to a port-side half that shows the radical new 'diagonal' structure proposed by the Surveyor (reproduced on page 154), the two parts providing a three-dimensional comparison between old and new.
[NMM D4069-4]



THE main elements in the structure of a First Rate as shown in this keyed 'dissection', engraved by Joseph Nutting. It is undated but the dedication to George St Lo, who was Commissioner at Plymouth Dockyard from 1695 to 1703, supplies an approximation. It is drawn to the ¼in = 1ft (1/48th) scale standard for official draughts, and outlines the 'length, form & scantlings' of all the principal timbers. Evidence for its reliability is the fact that it includes drumhead capstans, very much a novelty in the 1690s.
[NMM A7015]

THIS unplanked model of the *Royal George* of 1756 gives a good impression of the structural complexity, and the relative sizes of the timbers employed in building a

First Rate. With every other set of frames omitted, the construction of the decks, with their subsidiary carlings and ledges, can be seen, although the beam-end knees have been left off On the lower deck the inclusion of port sills indicate the gunports, but this feature is absent from the higher decks.
[NMM D4082-1]

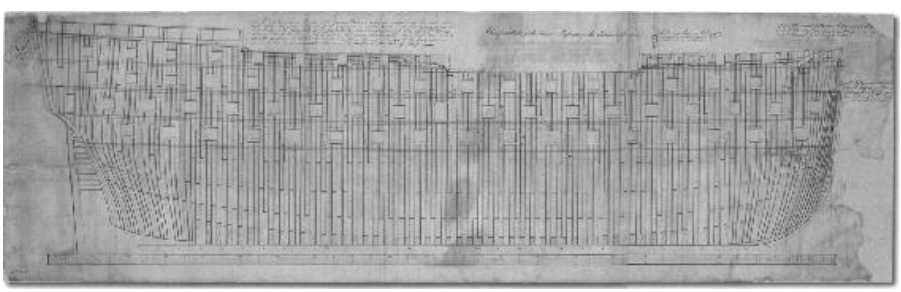
In the first 200 years of its existence the First Rate warship grew only gradually, but its final half-century was to see rapid increases in size made possible by the structural innovations of Sir Robert Seppings and his successors. Before Seppings – and in many important principles, after him – the construction and layout of these ships remained essentially constant throughout the period. First Rates were the largest, most complex and most expensive moving objects of their day, so changes were only introduced with great caution.

While almost the entire construction of a First Rate was from seasoned oak, the keel was usually made of elm, a material which better withstood constant immersion in salt water and was available in long straight lengths; the lengths were laid upon blocks which formed the slipway, set with a declivity (or incline) to the water of between 1 in 12 and 1 in 16, or horizontally if built in dry-dock. They were scarphed (or joined with overlaps and then bolted) together to form a continuous spine over a hundred feet long; in the very last First Rates, this keel length had extended to over 200ft following the radical redesigns introduced by Seppings. The keel ended towards the rear of the ship in a straight sternpost, which usually raked aft, preferably cut from a single length of first-class oak. At the other end of the keel, the stem was a curved section which began horizontally as a continuation of the keel but gradually turned until it ended in a vertical member at the ship's head.

The frames, which formed the rib-like skeleton of the ship, were set at right angles to the keel on both sides, consisting of curved (or 'compass') timber which began horizontally and then curved to rise up to form the side structure of the ship. These frames – strictly speaking, 'framed bends' – comprised several overlapping sections scarphed together in pairs, the first forming a floor and the curved pieces forming a series of futtocks. At the height of the various decks, deck beams were fitted to the futtocks, their ends supported by brackets called 'knees', set vertically (hanging knees), horizontally (lodging knees), or diagonally (dagger knees). The beams were cambered (rounded up), so that their centre was several inches higher than at the sides, so that water would run down to the sides and out through the scuppers. A wide variety of pillars, riders and other additional pieces of timber were fastened to add strength and rigidity to the ship by locking the main members together.

After the frame was completed, the structure was generally left for a

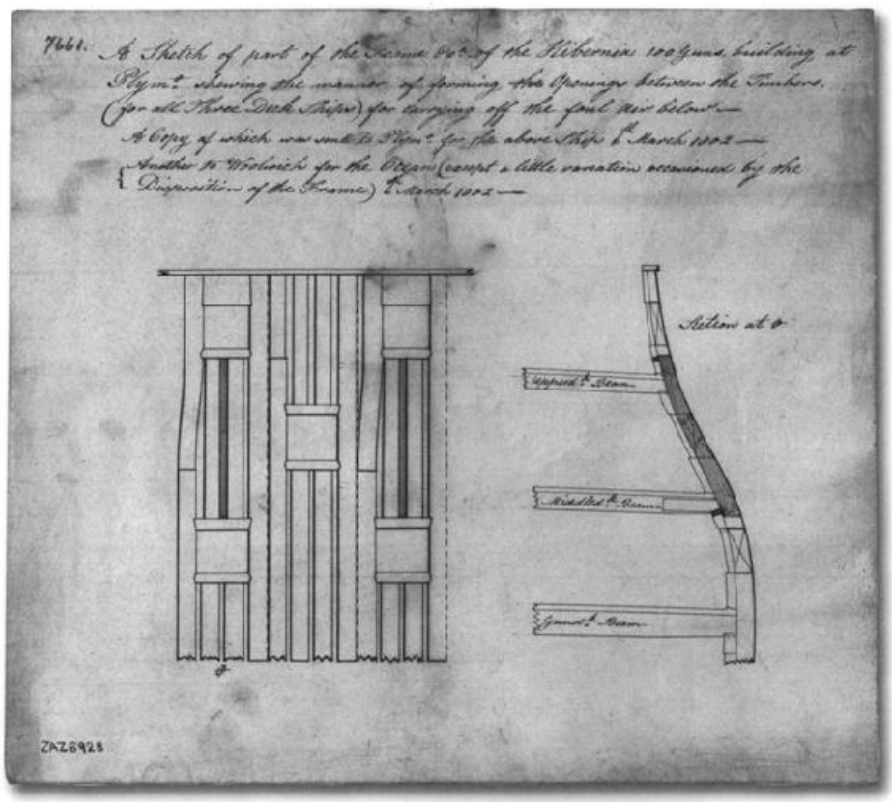
year or so in order to allow the hull to settle and to season. The drying out of the timber during this period would often cause some distortion in the structure, which would thus need to be adjusted before the planking could take place. At first there was no regulation to govern this period, but following an inspection visit to Chatham Dockyard by the First Lord, the Earl of Sandwich, in 1771, a minimum of one year was laid down by the Navy Board. Once seasoned, the frames were covered by oak planking, both internally and externally. The internal planking was done first, working upwards from that closest to the keel, the limber strake, which was set a short distance (about a foot in the case of a First Rate) out from the keelson. In the First Rates this strake was seemingly in two pieces; for example, in the *Victory* of 1765 these two pieces were each 8 inches wide. This was followed by the footwaling, generally bands of pitch pine. Further strakes of oak followed up the line of the futtocks, with the largest (in terms of plank thickness) of these longitudinal strakes being called – fairly unimaginatively – 'thick stuff'. Immediately above the line of the deck beams, further large longitudinal strakes called spirketting stiffened the structure at each deck level.



THIS is the framing draught for the *Caledonia* as designed (1796) but includes later modifications like the built-up bow. The production of a complete scheme of framing became more common as the eighteenth century progressed, augmenting but not replacing a written specification of the sizes, shapes and scantlings (sectional dimensions) of the timbers to be employed. Careful analysis of this draught reveals the complicated pattern of framed bends, with their overlapping futtocks, separated by very narrow vertical gaps. The frame plus one 'gap' was an important unit – called 'room and space' – in the structural plan of the ship, and a major determinant of ultimate strength. On this draught the newly introduced ventilation openings are emphasised in magenta ink.
[NMM J1951]

Externally, the lowest line of planking was the garboard strake. This was followed by the bottom planking, and then by diminishing strakes as far as the main wale. The wales were strakes of heavy and thicker planking which ran along the length of a ship making an important contribution to the longitudinal strength of the ship. On a three-decker, there were three wales: the lowest – the main wale – was

generally composed of two separate strakes from about 1650 until ‘closed’ (made solid) in the mid-eighteenth century, situated between the waterline and the lower edge of the lower deck gunports; the middle wale (peculiar to three-deckers) was found between the lower and middle decks; the uppermost or channel wale was generally composed of three strakes of heavy planking, generally between the middle and upper deck gunports. As the name implies, the channel wale (or ‘chain wale’) was the timber to which the chains from the shrouds were secured – the shrouds were the main standing rigging providing lateral support for the masts and to give them maximum spread they were carried down to platforms, called channels, extending from the ship’s sides.

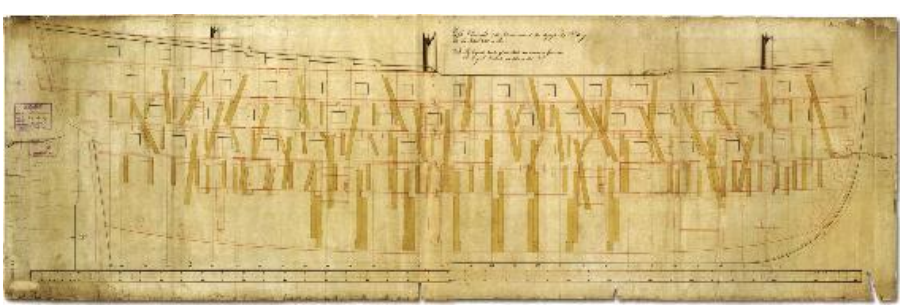

7661.
A Sketch of part of the Frame &c. of the Hibernia 100 Guns, building at
Plym.th showing the manner of framing the Openings between the Timbers.
(for all Three Deck Ships) for carrying off the foul Air below —
A Copy of which was sent to Plym.th for the above Ship 6th March 1802 —
Another to Woolwich for the Ocean (except a little variation occasioned by the
Disposition of the Frame) 6th March 1802 —
Orlop Deck
Middle Deck
Gun Deck
ZAZ8928

ROT and decay were major enemies of wooden warships, to which the only answer was the use of seasoned timber and the careful ventilation of the structure, which also contributed to the health of the crew. From the 1790s, ventilation shafts were built into the very framing of British warships, as shown in this detail. It is annotated: ‘A sketch of the frame of the *Hibernia* 100 guns building at Plymouth, showing the manner of framing the openings between the timber (for all three-deck ships) for carrying off the foul air below – a copy of which was sent to Plymouth for the above ship 6th March 1802 – another to Woolwich for the [Second Rate] *Ocean* (except a little variation occasioned by the disposition of the frame), 6th March

1802.' The sectional sketch on the right also illustrates well the high degree of tumblehome – the inward inclination of a ship's side from its widest point around the level of the lower deck up to the narrower width at upper deck level. This narrowing as the side rose contributed to the stability of the ship, so that it was less likely to roll heavily.
[NMM J0805]

Originally these channels were located below the middle deck gunports, but after 1703 the reduction in tumblehome (the inwards inclination of a ship's side as it rose from its broadest part around the level of the lower deck) meant that the fore and main channels could be raised above the middle deck ports, making them less exposed to damage in high seas. The mizzen channels were always one deck higher than those for the fore and main shrouds, but in 1745 the main and fore channels were again raised, this time above the upper deck ports; a decade later they reverted to their previous location. However, in the 1780s these channels were again moved above the upper deck ports, probably commencing with the *Royal George* of 1756, and remained so for the rest of the sailing era. Finally in 1803 the mizzen channels were moved again, this time to above the quarterdeck gunports.

Overall, enormous quantities of timber were required for the construction of a First Rate. The quantity naturally rose as the size of such ships grew over the centuries, but – as an example – the *Royal George* of 1756 needed 288,025 cubic feet of timber (defined in timber merchants' terminology as 5760 loads' of timber, a load equating to 50 cubic feet); the next First Rate, the *Victory*, required over 300,000 cubic feet. The majority of this timber was compass (curved) or straight oak, but elm was required for the keel and such planking such as the garboard strake, and fir, pine or spruce for the masts and spars.



HOWEVER carefully a wooden warship was constructed, extensive sea-time would inevitably wrack the structure, loosening fastenings and resulting in leaks and decayed timbers. Regular repairs were therefore expected and planned for. This profile draught of the *Victory* of 1765 indicates new timbers in brown wash, and includes additional top riders for increased strength. The draught is undated, but the ship is shown still bearing an open stern so may relate to the repair of 1787–8,

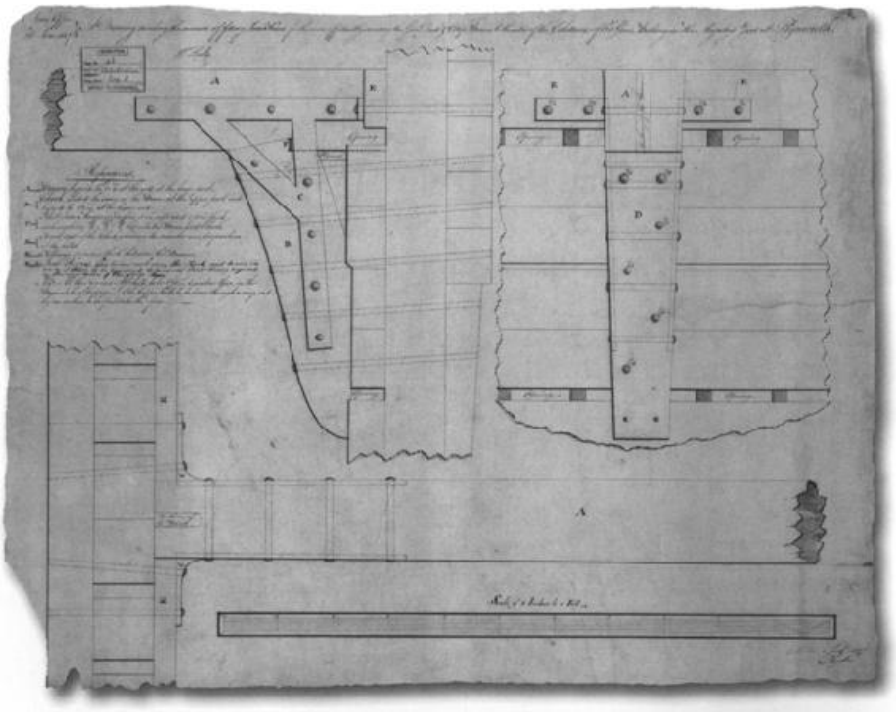
rather than the pre-Trafalgar reconstruction.
[NMM J1843]

It was essential to protect the hull of any wooden ship from deteriorating when immersed in seawater, where is was liable to rot and to be attacked by marine boring creatures or barnacles and other life-forms which would encrust the hull and reduce sailing performance. The problem of rot was countered by avoiding 'green' or unseasoned timber whenever possible, and interior ventilation systems were gradually introduced. From the time that warships began to serve long periods in tropical waters, where boring by teredo worms was a major menace, various compounds were used to sheath the hull, generally a mixture of horsehair, tallow and sulphur, which was deemed poisonous, and light 'sacrificial' exterior boards. However, lead sheathing was experimented with from 1674, and abandoned as impractical, but the eventual solution was discovered in the early 1770s when copper sheathing became a regular feature. This required many thousands of individual copper plates (almost 4000 were used for the *Victory* of 1765, each 4ft long and 14in broad) to be fastened to the planking with copper nails.

The hull of a ship at sea was subject to many stresses caused by wind and wave action: 'hogging', which caused the less buoyant ends to drop, arching the keel; 'sagging', its opposite; and 'racking', which twisted the structure. Wooden ships, consisting of many relatively short structural pieces, were especially vulnerable, and as the parts moved, the fastenings loosened and ships became leaky and rotten. The heavy and complex structure of a First Rate was intended to minimise this action, but it was never eliminated entirely. During the long wars of 1793–1815 British ships spent more and more time at sea, increasing the strains on their hulls, while every ship that could be kept seaworthy was a valuable addition to an over-stretched fleet. There was also an increasing scarcity of the naturally crooked timber for knees, and all these pressures combined to encourage innovation among the shipwrights, leading to experiments with iron knees and alternative systems of fastening beams to frames.

Such attempts were not new: from the late seventeenth century onwards designers like Anthony Deane and Edmund Dummer, and more recently the East India Company's Surveyor, Gabriel Snodgrass, had struggled with methods of making wooden hulls more rigid. Many had tried various forms of diagonal or cross-bracing, but from 1811 Robert Seppings worked on a complete system he was to call the 'trussed frame', which was based on an interlocking set of X-shaped riders fitted along the insides of the hull. Initially used to repair old and hogged ships, its advantages in terms of strength were quickly appreciated for new construction, and his methods quickly became the

standard after he was appointed a Surveyor of the Navy in 1813 in place of Sir William Rule. There were many other improvements in the details of construction which in total added greatly to the structural strength of ships, allowing the rapid increase in size that characterised the last generation of sailing warships. Seppings also improved the design of the bows of ships and completely remodelled the stern, making probably the largest contribution by any one man to the final years of the wooden warship.

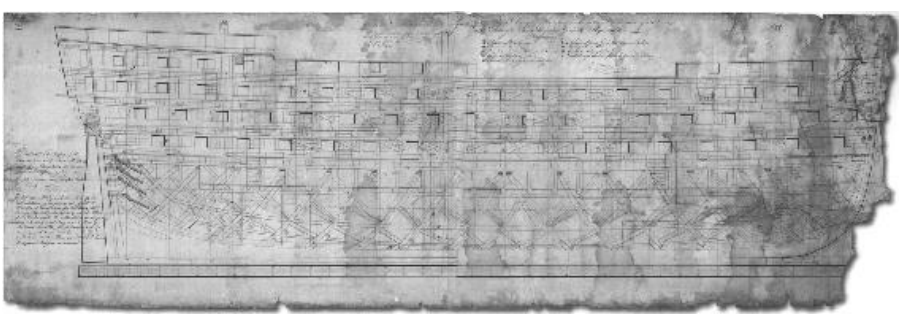


WITH the increasing scarcity of natural crooked timber for the all-important knees that fastened the beams to the hull sides, attempts were made to replace them with iron. Different designs were tried but eventually Thomas Roberts's wrought iron plate knees became standard. Both hangings and lodging knees were replaced by a chock under the beam and plate knees bolted to either side, as shown in this three-view sketch from 1807 of the *Caledonia*'s orlop and lower (gun) deck beams. Note that the plate includes an L-shaped bracket (visible in overhead and end-on view) that performed the function of the old lodging knee. [NMM J1955]

Although not strictly an aspect of structure, some mention should be made of the propulsion system – the rig – which drove the ship. Essentially, like all major war-vessels of the age of sail, the First Rate was a *ship* in the specific definition of this era: a three-masted vessel, square rigged (with sails set from horizontal transverse spars called 'yards') on its lower fore and main masts, and fore-and-aft rigged with a lateen or later a gaff sail on its mizzen mast; the topmasts and

topgallant masts which rose above the fore and main masts each carried a further square sail, and by the middle of the seventeenth century the mizzen mast also acquired a topmast and topsail, and in due course a mizzen topgallant was added. The *Sovereign of the Seas* carried an even higher tier of yards and sails – the 'royals' carried above the topgallants, and this was eventually extended to all First Rates.

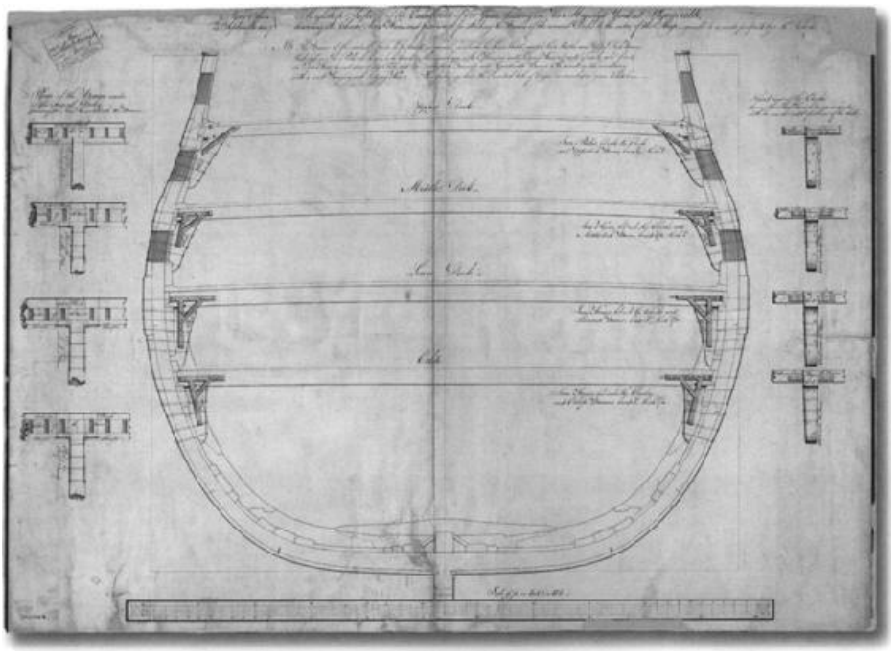
In parallel with this upwards extension of the sail area, a lateral extension to each side of the ship was achieved by attaching temporary booms to the yards on the fore and main masts and their topmasts and topgallant masts. On these booms further sails – called studding sails, although pronounced stunsails – could be set. Further sails, termed staysails, were carried on the fore-and-aft rigging. With all these added, a full set (or 'suit') of sails usually comprised thirty-seven sails (not counting another twenty-two spares). The set for Nelson's *Victory*, as an example, gave a total sail area of 6510 square yards (an acre and a third); 26 miles of hemp rope was required to provide the standing and running rigging which secured the masts and controlled the yards and sails.



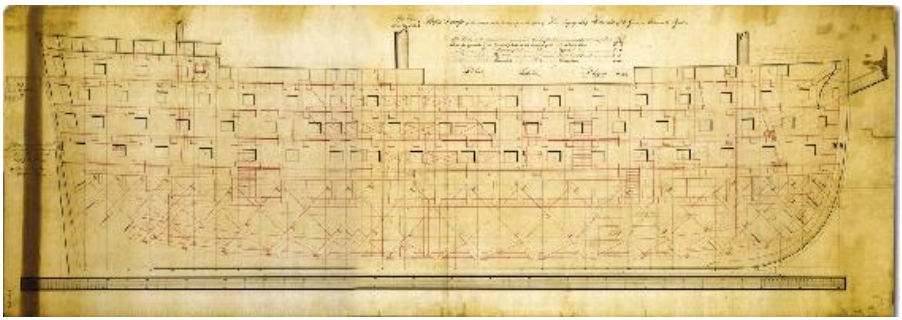
THIS profile draught of the *Britannia*, dated January 1815, is one of the first to show the full gamut of Seppings's new structural system, and in particular the extent of the diagonal trusses. It is signed by the Surveyor himself. Its novelty required the main elements to be keyed for the shipwrights using the draught. The new round stern is also indicated.
[NMM J1959]

In the bow of the ship, the bowsprit was a long spar rising through the base of the beakhead bulkhead at an angle of between 30 and 36 degrees to the horizontal; the angle increased during the seventeenth century, but was much reduced in the eighteenth. The length of the bowsprit was almost as great as that of the foremast. The heel of this bowsprit was sited on the lower deck, close to that of the foremast. A vertical mast (called a spritsail topmast) was mounted on the end of bowsprit in the seventeenth century, carrying an additional square sail, but this was abandoned in the eighteenth century and instead an

extension of the bowsprit, known as the jibboom, was added, and by the early nineteenth century a further extension, the flying jibboom, had been added. The bowsprit and jibboom carried yards (and hence square sails) fastened below them in the same way as the vertical masts, but they fell into disuse with the introduction of fore-and-aft jibs and staysails set from the bowsprit and its extensions.

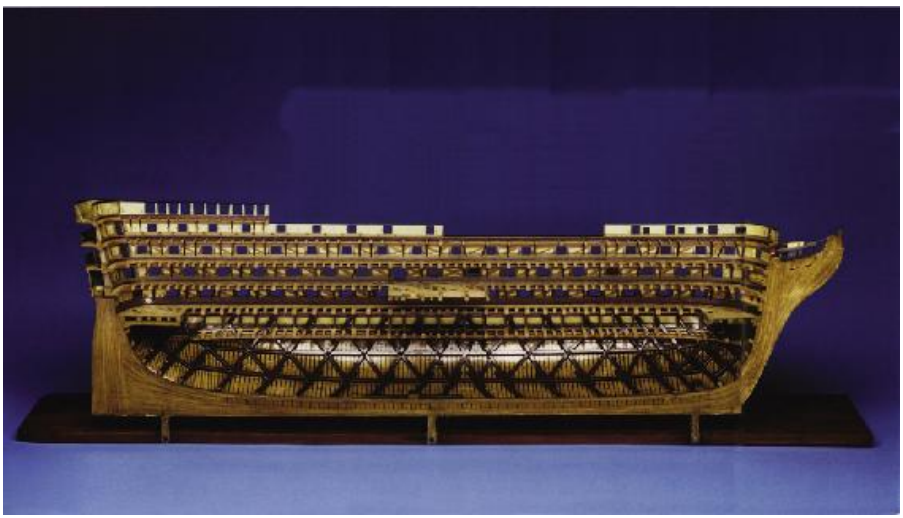


A midships section of the *Caledonia* showing how the angle between the horizontal and vertical of the iron knee varied depending upon which deck level they served. This required virtually every knee to be individually wrought for each position, removing the potential advantage of mass-production; it may also explain why so apparently obvious an improvement had not been adopted earlier.
[NMM J1953]



BESIDES being used in new construction, Seppings's improvements were also applied retrospectively when ships underwent major repair. This draught of May

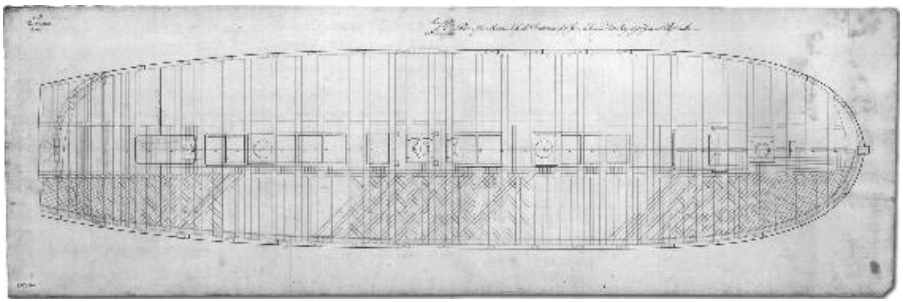
1821 relates to the reconstruction of the *Hibernia* at Portsmouth, a long and substantial rebuilding that lasted from 1819 to 1825 and cost £74,302, in which the trussed frame was introduced and the ship was given a circular stern. At the same time the height between decks was standardized, which may have been associated with the rationalisation of the armament to 11432-pounders (of varying weights), plus six 68-pounder carronades.
[NMM J1817]



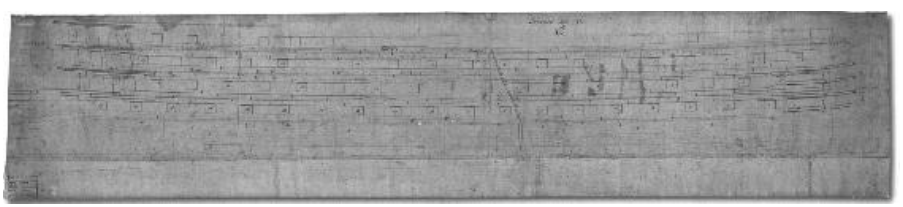
THE portside interior of the comparative model Seppings commissioned to show off his innovations. The main elements of the trussed frame in the hold are picked out in brown, but there are smaller diagonals fitted between all the gunports. The more substantial structure of his round stern design can also be seen. This model is always catalogued as the *Caledonia*, but is more of a comparison between the structure and appearance of the ship as designed and as it would look after modification by Seppings.
[NMM D4059-5]

An exception to the ship rig proper was the very earliest of the First Rates, the *Prince Royal* of 1610 which as first built was a four-masted vessel, the fourth mast, or 'bonaventure mizzen', being an anachronistic holdover from the Tudor galleon. At that time, the gundecks of the *Prince Royal* were not continuous, being stepped down towards the stern to compensate for the severe sheer, or rising of the decks and the wales towards the ends of the ship. Nevertheless, at her first major reconstruction the Prince Royal was rebuilt to eliminate these characteristics, and assumed the layout which was to last until the advent of the steam age. In the *Sovereign of the Seas* and later First Rates, there were three flush gun-decks with no step-down. The overall appearance was altered over time by increasing length, reduced height, diminishing decoration and a reduction in the sheer until the profile of the hull became virtually flat in nineteenth-century vessels – but they were still marked out by three continuous rows of

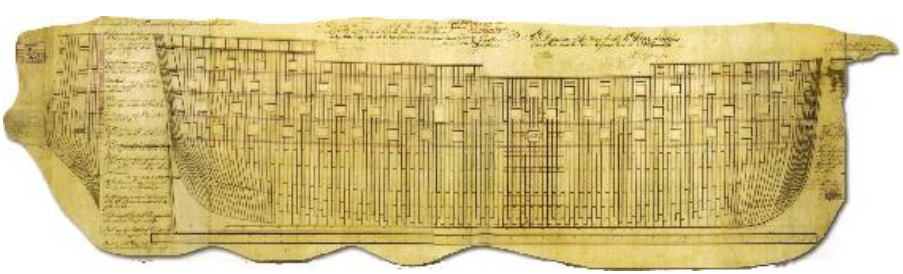
gunports.



THE essential principle behind Seppings's system is the same as that familiar from a five-bar gate – the diagonal piece prevents the lateral movement of the other four bars relative to one another that was so detrimental. Initially Seppings carried his enthusiasm for this principle to great lengths, even planning to plank the decks diagonally over the transverse beams, as shown in this 1818 plan of the *Britannia*'s middle deck. However, it was found that the additional strength did not compensate for the practical difficulties of its construction, and it was soon abandoned.
[NMM J1962]

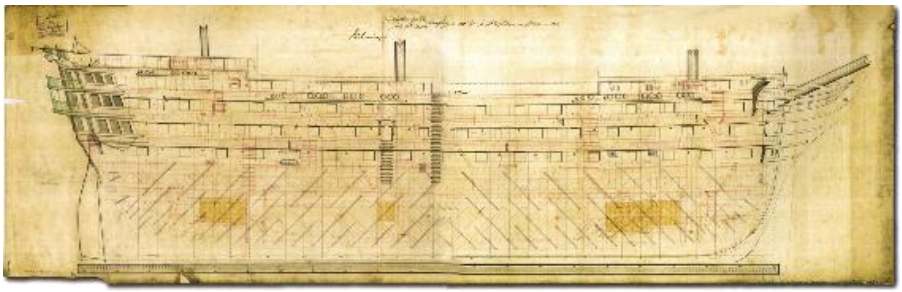


THIS sketch, dated 1822, depicts the external features of the *Hibernia*, then undergoing reconstruction at Portsmouth. It is mainly concerned with the new run of the wales, but also indicates the exact scheme of planking below the main wale: not simple parallel strakes but an interlocking pattern known as top-and-butt. There is also a simple sectional outline of the side drawn over the centre of the draught. The ships of this generation are often called 'wall-sided', but as demonstrated by this section, it meant that the concave curve in the tumblehome of the topside was flattened out, not that the sides were vertical.
[NMM J1816]

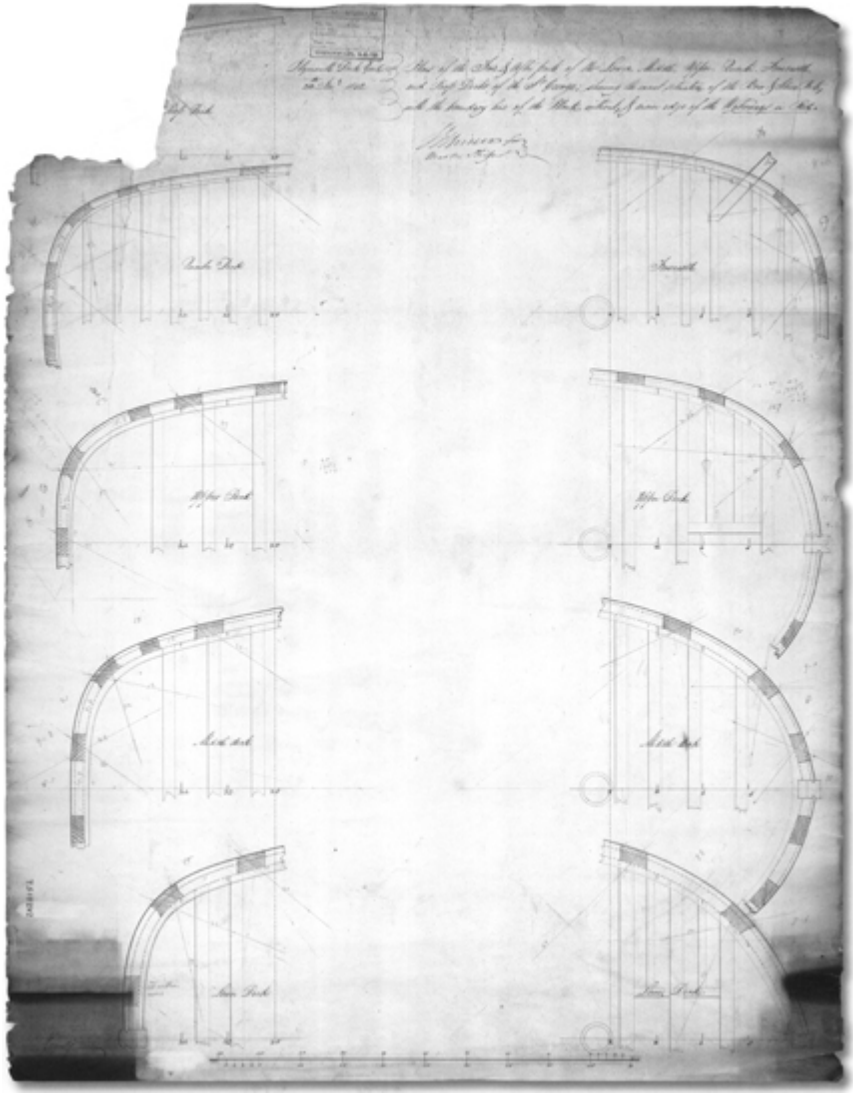


THIS framing draught for the *Saint George*, dated 1820, shows the way the Seppings round stern was constructed. A less obvious improvement introduced by Seppings

was to redesign the way each framed bend was put together, allowing the use of smaller individual futtocks, for greater economy. He also filled the spaces between the frames below the orlop deck, so the lower body of the ship, in effect, became a solid mass of timber.
[NMM J1729]



SEPPINGS replaced the heavy wooden riders of his trussed frame with iron straps, initially in frigates and smaller vessels, but this was later extended to ships of the line. This profile of *Trafalgar* from July 1845 shows the vessel as fitted in 1844 for an Advanced Ship; it depicts the iron riders in blue with wooden diagonal riders at the opposite angle. The form of the elliptical stern, with its external balconies is also clear.
[NMM J1837]

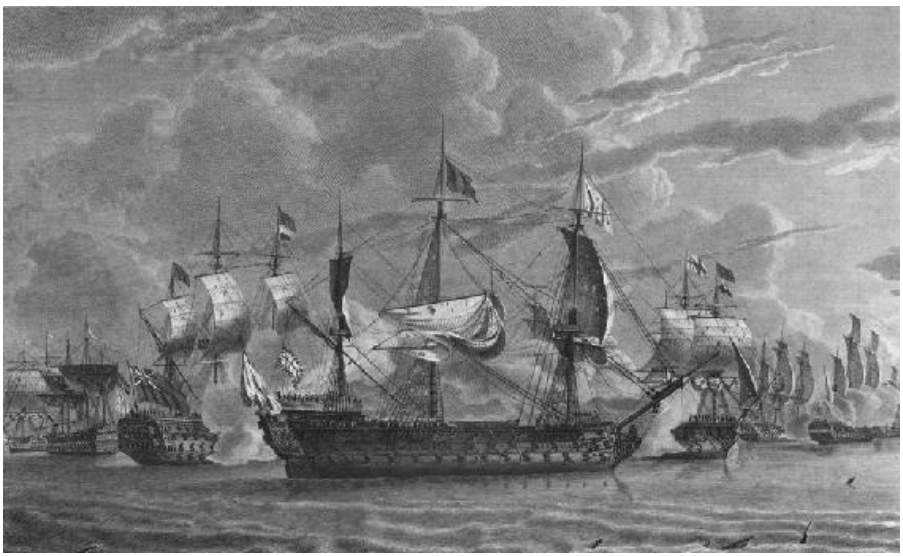


ONE chauvinistic criticism of Seppings's bow and stern design was that it was hardly in the Royal Navy's interest to teach Britain's enemies how better to defend themselves against attack. The answer to that was the improved firing arcs they provided, making British ships better able to launch – and survive – a Trafalgar-style bow-on assault. This 1842 sketch of *Saint George* demonstrates the point perfectly: there are no blind spots and the level of fire that can be directed forwards, aft, on the quarters and the luffs is unprecedented.
[NMM J1724]

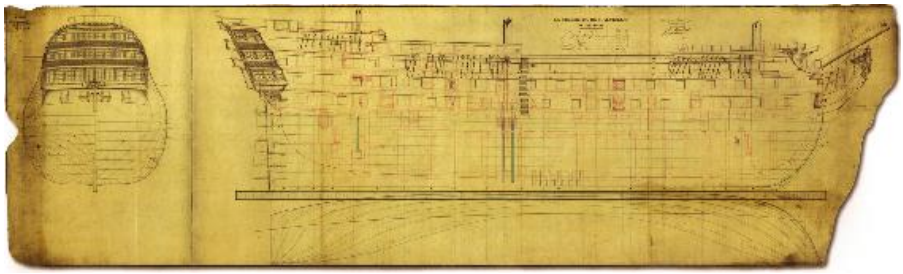
CHAPTER

11

First Rate Prizes



THE French flagship *Ville de Paris*, carrying Vice-Admiral Comte de Grasse, was captured off the Saintes (south of Guadeloupe) on 12 April 1782 by Rodney's fleet. The battle degenerated into a general chase, and the *Ville de Paris* was taken at 6.29pm (towards sunset) by the *Barfleur* (Hood's flagship) and the *Russell* after having valiantly defended herself against numerous opponents throughout the afternoon, and virtually exhausting her ammunition. The form of the ship is accurately depicted in the foreground of this engraving of the battle by Robert Dodd. Soon afterwards, Rodney called off the chase, leading Hood and others to allege that he thus missed the opportunity to capture several additional prizes. Described in her day as 'the finest ship afloat', the *Ville de Paris* was added to the Royal Navy as a First Rate of 110 guns (French records show her carrying only 104 guns). However, she was wrecked off Newfoundland just five months later, having never reached England.
[BEVERLEY R ROBINSON COLLECTION, ANNAPOLIS]



THE prize three-decker *Commerce de Marseille*, handed over by French Royalist forces at Toulon in August 1793, was sailed home to England in December. She had been Frances prototype 118-gun ship, built at Toulon between April 1787 and October 1790, and was the largest ship in the world at the time of her capture. She had excellent sailing qualities, so impressing the Admiralty that they were determined to put her into commission. However, dockyard inspection showed that she was structurally too weak for the constant sea duty to which the British flagships were subjected, and reluctantly the Navy Board registered her in January 1795 as a storeship. The Admiralty planned to send her to the Caribbean in this role, but even in this capacity her structure proved deficient, and after enduring a near-fatal storm, she returned to Plymouth in January 1796, where she was paid off into Ordinary and spent the rest of the French Revolutionary War as a prison hulk in Plymouth harbour. With the end of that war, she was retired from even that role and was taken to pieces in 1802. This draught was taken off at Plymouth in September 1796. Compared with British ships, the noticeable features – apart from her great size – was the flat sheer line, upright sternpost, and a short upswept head.

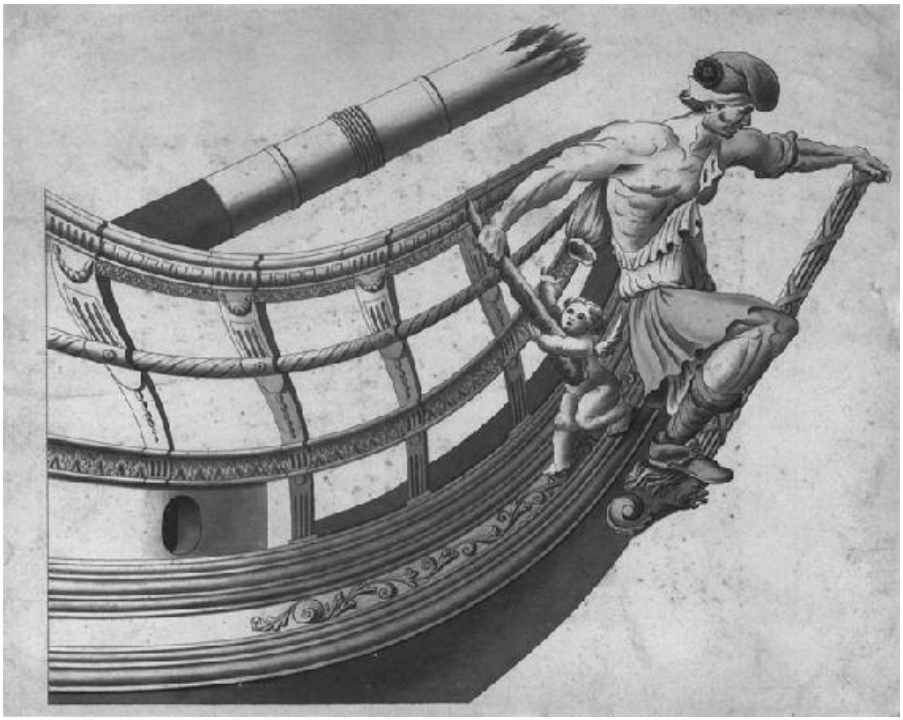
For all its successes in battle, the Royal Navy did not capture an enemy First Rate until 1782, Circumstances conspired against it: in the seventeenth century, the Dutch had no three-deckers before the 1680s (and even then none that would be classed as First Rates in Britain); the French built some spectacular examples, but in the wars of 1689–97 and 1702–13 rarely committed them unreservedly to battle. There was a chance at Barfleur in 1692 when the *Soleil Royal* was beaten out of the line by *Britannia*, but Tourville's flagship was later burned by the boats of the Anglo-Dutch fleet rather than captured; and for much of the mid-eighteenth century, First Rates had a low priority in French construction programmes (the *Soleil Royal* which shared a similar fate to its namesake after the Battle of Quiberon Bay in 1759 was, although fleet flagship, only an 80-gun ship). However, the reverses of the Seven Years War led the French navy to revive its interest in First Rates in the following decades.

One of these ships became the first enemy three-decker to fall into British hands. The French 104-gun ship *Ville de Paris* was captured, along with Vice-Admiral Comte de Grasse whose flagship she was, at the Battle of the Saintes in 1782, The ship, designed by François-Guillaume Clairin-Deslauriers, had been built as a 90-gun *vaisseau de premier rang* at Rochefort between August 1757 and May 1764, initially under the name *Impétueux* until January 1762 when the city

authorities in the French capital agreed to fund her construction as a gift to their king. During repairs at Brest in 1778–79, the waist was filled in to create a continuous third deck, with a new quarterdeck and forecastle constructed above and fourteen 8-*livre* (8lbs 9½oz English equivalent) guns added to her ordnance; she was coppered in September 1780,

Besides the 8-*livre* guns, she mounted thirty of the French 36-*livre* (38lbs 14oz English equivalent) guns on her lower deck, thirty-two of the 24-*livre* (25lbs 14½oz) guns on her middle deck, and twenty-eight 12-*livre* (12lbs 15¼oz) guns on her upper deck (seemingly not altered when the waist was filled in), After capture by Rodney's fleet off the Saintes, she was commissioned on the next day under Captain George Wilkinson and continued to serve with the British fleet in the Caribbean, retaining her French guns. She was en route to Britain barely five months later when she was caught in a hurricane off Newfoundland, sinking with just a single survivor. To preserve the memory of their achievement, the British named their next First Rate *Ville de Paris*.

The ranks of three-deckers were augmented during the French Revolutionary War by the capture of three First Rate equivalents. Taken at Toulon in August 1793, and brought back to Britain in December, the prestigious French three-decker *Commerce de Marseille* allowed the Navy Board to examine in detail the 120-gun standard design of Jacques-Noël Sané, to which all subsequent French three-deckers would be built during the Napoleonic Wars. In French service she carried thirty-two of the French 36-*livre* guns on her lower deck, the same quantity of the 24-*livre* guns on the middle deck, and the same again of the 12-*livre* guns on the upper deck; she also carried twenty of the 8-*livre* guns, fourteen on her quarterdeck and six on the forecastle, while there were (not counted in her total rating) 4 brass *obusiers* (a French equivalent of a carronade, although not a direct copy) of 36-*livre* on the poop. The French complement was 1098 officers and ratings. In the British Navy, she was re-armed with thirty-four 32-pounders (lower deck), thirty-four 24-pounders (middle deck) and fifty-two 12-pounders (34 upper deck, 14 quarterdeck, and 4 forecastle); she also had also two 32-pounder (forecastle) and eight 24-pounder (poop) carronades, with a complement of 875.



THE emblematic carved figures at the prow of wooden warships were reflections of the policies and priorities of the state they were built for, as much as investments in national mythologies. The second of the *Commerce de Marseille* class to be built as Toulon, the ship ordered on 21 November 1789 and launched in July 1791 as the *Dauphin Royal*, was renamed *Sans Culotte* in September 1792 to pay homage to the celebrated working-class revolutionaries, and this figurehead may be drawn from her. The *Sans Culotte* was completed in August 1793, but was renamed *Orient* in May 1795; she was destroyed at Aboukir Bay (the 'Battle of the Nile') by Nelson's fleet on 2 August 1798. The epic poem 'Casabianca' by Felicia Dorothea Hemans, beginning 'The boy stood on the burning deck ' commemorates the bravery of her Gascon captain, Louis de Casabianca and his young son Giocante.

Initially, the size and sailing qualities of the ship impressed her captors, but closer inspection revealed that she was too weakly built for British service. It was then planned to use the ship as a huge troop transport, but when she was nearly wrecked in a storm, the Royal Navy lost all confidence in the ship, which was thereafter reduced to harbour service. Her sister-ship – variously named *Dauphin Royal*, then *Sans Culotte*, and finally *Orient* – was destroyed by fire and explosion at the Battle of the Nile in 1798.

Rather more useful were two Spanish ships captured off Cape Saint Vincent on 14 February 1797. Between 1779 and 1794 the Spanish had laid down three three-deckers to a design by Francisco Gautier, following this up with a further seven similar ships designed by Romero Landa. Six of these ships – *Puristna Concepcion, Mejicano, San*

Josef, Salvador del Mundo, Conde de Regla and *Principe de Asturias* – were present with Admiral Don José de Cordova's twenty-seven-strong fleet in this battle against Admiral Sir John Jervis's fifteen British ships of the line, of which only two were First Rates (*Victory* and *Britannia*).

An early capture, achieved mainly by Captain Cuthbert Collingwood's 74-gun *Excellent* around 3 pm, was the *Salvador del Mundo*, following closely upon the surrender to *Excellent* of the 74-gun *San Ysidro*. Soon afterwards Collingwood's long-term friend, Commodore Horatio Nelson in the 74-gun *Captain*, achieved even greater success by personally boarding and seizing the 80-gun *San Nicolas*, and then capping this by sending further boarders *across* the two-decker to proceed to take the 112-gun *San Josef*, which had become entangled on the far side of the *San Nicolas*, It was this double success – popularly acclaimed as 'Nelson's Patent Bridge' – which solidified the Commodore's growing reputation as a national hero.

The French Prizes of 1782 and 1793 – history, and dimensions in feet and inches

VESSEL	DESIGNER, BUILDER	BUILT	CAPTURED	FATE
Ville de Paris	Claitin-Deslauriers, Rochefort	1757-64	12. 4.1782	Foundered 30.9.1782
Commerce de Marseille	Jacques-Noël Sané, Toulon	1787-90	29. 8.1793	Troopship (50 guns) 1795 to 1796, receiving hulk from 1797, prison ship by 1800; sold 1802.

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Ville de Paris	185 7½	153 0	53 8½	22 2	2347 53/94
Commerce de Marseille	208 4	172 0½	54 9½	25 0½	2746 73/94

The four Spanish prizes were commissioned as British warships and retained on the Lisbon station for service there until the autumn. They arrived at Plymouth on 5 October, and the two three-deckers were registered as First Rates on 4 December Both were re-armed with British guns – 32-pounders on the lower deck, 24-pounders on the middle deck, 12-pounders on the upper deck and 9-pounders on the quarterdeck and forecastle; their complement of men was fixed at 839. The second ship – the *San Josef* – mounted two extra 32-pounders on the lower deck to make her a 114-gun ship, but was otherwise armed/ manned as the *Salvador del Mundo*.

The *Salvador del Mundo* spent most of her British service as a receiving ship at Plymouth, but the *San Josef* was more highly regarded, and proved to be the most durable of the prizes, Edward Brenton, who on retirement produced a *Naval History of Great Britain*, wrote that 'her lower ports were higher out of the water (with all her sea stores in) than was ever known in any other ship of the line; she could carry her [lower deck] guns run out when few British ships

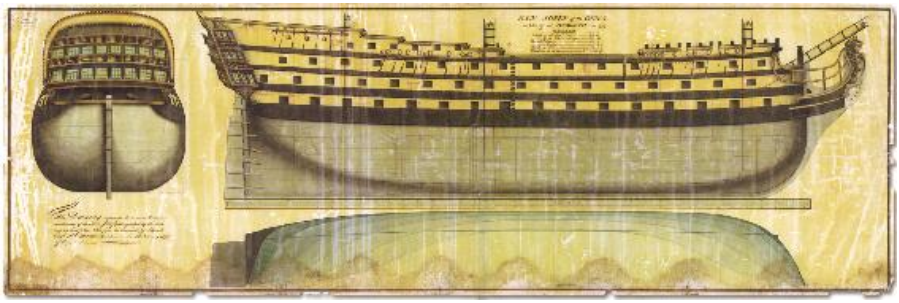
would have ventured to open a port; she stowed 500 tons of water and we had nothing that compared with her as a ship of war.' In fact, Brenton confirms this freeboard amidships as being 5 feet 10 inches (on a draught of 25¾ feet forwards and 27 feet aft) compared with 5 feet 6 inches for the *Caledonia* and 5 feet 2 inches for the smaller *Queen Charlotte*. Only with the Victorian era designs did this improve – the later *Queen* (ex *Royal Frederick*) having a freeboard of 6 feet 6 inches. She was refitted between June 1799 and the beginning of 1801, seeing active service almost continuously, often as a flagship, until 1807 when she underwent an expensive two-year Large Repair, followed by more service in the Channel and Mediterranean until the end of the war. The ship was thought worth keeping in good repair during the post-war decades, although she never again went to sea; her final commission in 1837 was in the role of a stationary gunnery training ship, and she was not finally paid off until 1846. When taken to pieces in 1849, the ship had enjoyed a lifespan of 66 years – matching that of many famously long-lived British equivalents, and a testimony to the quality of Spanish shipbuilding.

Two more of these Spanish 112-guns ships were destroyed by the Royal Navy off Gibraltar in 1801 – the *Real Carlos* and *San Hermenegildo*. An even larger – but older – Spanish three-decker was to be destroyed in the same vicinity just four years later, at the battle of Trafalgar; the *Santisima Trinidad* had been Spain's most famous sailing warship and their first three-decker, designed and built at Havana in 1769 by Irish-born shipwright Mateo Mullán; she had been substantially rebuilt in the mid-1790s with the waist between quarterdeck and forecastle filled in and armed (thus making her technically a flush four-decker) with a total of 130 guns' The conversion made her an extremely poor sailer and unsuccessful as a gun platform, but she was present at Trafalgar and fell into British hands, but had to be abandoned during the storm that followed the epic battle and was wrecked.

The *Salvador del Mundo* and *San Josef* (Spanish Prizes of 1797) – history, and dimensions in feet and inches

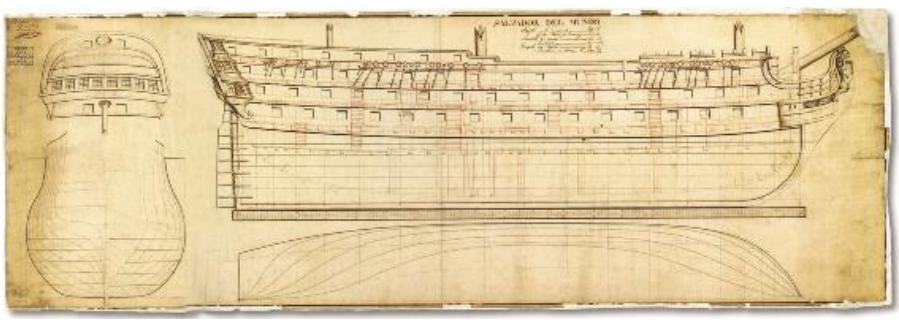
VESSEL	BUILDER	BUILT	CAPTURED	FATE
Salvador del Mundo	Ferrol	1787	14. 2.1797	Harbour service 1797; BU 2.1815
San Josef	Ferrol	1783	14. 2.1797	Gunnery training 1837; BU 5.1849

VESSEL	GUNDECK	KEEL	BREADTH	DEPTH	TONS
Salvador del Mundo	190 0	152 11	54 5½	23 1½	2397 47/94
San Josef	194 5	156 11½	54 5	24 3½	2436 39/94



THE Spanish three-decker *San Josef*, captured by Nelson at the Battle of Cape St. Vincent in 1797, had been designed by Francisco Gautier and built at Ferrol in 1783. The last of three 112-gun ships built to this design, she was to have a long and distinguished career in the hands of her new owners. The original of this attractive external elevation of the ship was said to have been once owned by Lady Emma Hamilton, evidence of Nelson's attachment to his largest-ever prize, which he once described to Lord Spencer as 'the finest ship in the world'. Edward Brenton, in his *Naval History of Great Britain* (1823) added that she 'was long admired in the British Navy, uniting all the superior qualities of a ship of the line with the sailing [ability] of the fastest frigate.' Little different in appearance from the other 112-gun ship captured from the Spanish Navy in the same battle, the *San Josef* had an additional hawse port forwards on the lower deck. She was re-armed for British service with sixteen pairs of 32-pounders on this deck (one more pair than in the *Salvador del Mundo*), indicating that the hawse ports received the additional pair of guns.

The last enemy three-decker to be destroyed in action by the Royal Navy was the 118-gun *Imperial*. This French vessel was a modified version of the *Commerce de Marseille* design, launched at Brest in 1804 as the *Vengeur* but renamed in 1805. She was driven ashore and destroyed at San Domingo in February 1806.



THE 112-gun *Salvador del Mundo* was designed by the Spanish naval architect Romero Landa and was launched at the Ferrol shipyard in 1787. In British service she was rearmed at Plymouth with fifteen pairs of 32-pounders on the lower deck replacing the original Spanish 36-pounders. She also carried sixteen pairs of 24-pounders on the middle deck, an equal number of 12-pounders on the upper deck, a dozen 9-pounders on the quarterdeck and six of the same calibre on the forecastle.

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